Facility Commander 2.2

Installation Manual

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Contents

Preface

This document describes how to install Facility Commander and its components. It also includes instructions to connect hardware and other peripheral devices.

There is also information describing how to contact technical support if you have questions or concerns.

This document is intended for system administrators, business partners, or installer technicians responsible for system installation and integration.

Installer technicians should be familiar with personal computers, client and server relationships, databases, Web browsers, and graphical user interface (GUI) navigation. They should also have a working knowledge of:

- Picture Perfect application
- Database operations

Everyone should read the chapters, such as the Introduction, database, and any other components needed for system installation and integration.

Related Documentation

The following documents contain detailed information about specific software and operating systems:

- *Facility Commander Administration Guide*
  This document describes Facility Commander and its components. It describes the Facility Commander interface and contains step-by-step procedures to use the application.
- *Picture Perfect 4.0 Installation Manual*
  This document describes how to install and configure the Picture Perfect application.
- *Picture Perfect 4.0 User Manual*
  This document describes how to configure and manage the Picture Perfect application. It describes the Picture Perfect interface and contains step-by-step procedures to use the application.

More documentation is available about these products. Also, refer to other vendor’s or manufacturer’s documentation as well.

Conventions used in this document

The following conventions are used in this document:

Bold	Menu items and buttons.
Italic	Emphasis of an instruction or point; special terms.
	File names, path names, windows, panes, tabs, fields, variables, and other GUI elements.
	Titles of books and various documents.
Blue italic	(Electronic version.) Hyperlinks to cross-references, related topics, and URL addresses.
`Monospace`	Text that displays on the computer screen.
	Programming or coding sequences.

Safety terms and symbols

These terms may appear in this manual:

CAUTION: *Cautions* identify conditions or practices that may result in damage to the equipment or other property.

WARNING: *Warnings* identify conditions or practices that could result in equipment damage or serious personal injury.

When disposing of this product, please separate it from other waste and deliver it to the appropriate recycling center in your country, in accordance with Waste Electrical and Electronic Equipment (WEEE) directive 2002/96/EC and amendment 2003/108/EC and their respective national equivalents. For more information, visit *www.recyclethis.com*.

Chapter 1 Introduction

This chapter provides an overview of your Facility Commander 2.2, including minimum hardware/software requirements and steps you need to perform before you begin installing, configuring, and using your Facility Commander 2.2.

In this chapter:

Product overview

Facility Commander is a security integration platform that provides integrated digital video, analog video switchers, intercom, and intrusion with access control. It interfaces with Picture Perfect, which continues to perform all access control, alarm, and reporting tasks.

The main features of Facility Commander include a comprehensive alarm management system with direct access to graphical maps and video clips from the Alarm Monitor, and a high-level command and control interface to Digital Video Recorders (DVRs) and their connected cameras.

Configuring Facility Commander is accomplished using a Web browser, such as Internet Explorer. Operators select which facilities, doors, inputs, and outputs they want to control from Facility Commander and import these records from the access control system.

The alarm events associated with these devices can be configured to perform any number of actions in Facility Commander. For example, if a door has a video camera monitoring it, whenever a Door Forced alarm occurs, the system can be configured to send an e-mail notice to the Security Supervisor, and also tag the video clip so it can be reviewed later.

Monitoring the system is accomplished using the Facility Commander Launcher, which provides the capability to monitor alarms and control video cameras. All alarms generated by Picture Perfect are sent to the access control system's Alarm Monitor, and also to the Facility Commander Alarm Monitor. From the Facility Commander Alarm Monitor, security personnel can perform all of the operations that they can do on Picture Perfect.

The Facility Commander Command and Control client features include:

- Create or import site maps for graphical representation of device and alarm locations
- Associate symbols and icons with devices, such as doors, intercoms, intrusion devices, and cameras
- Display a graphical map showing the location of an alarm and the alarm state
- Control devices from graphical maps, such as locking or unlocking a door
- Acknowledge alarms from either the graphical map or from the alarm monitor
- View recorded video clips associated with alarm events
- View live video from fixed or PTZ cameras
- Control a PTZ camera on-screen by using the mouse to pan, tilt, and zoom
- Search for video clips stored on a DVR by event, event type, camera, or DVR

Video management

The key feature of Facility Commander is integrated digital video. There are two architectural configurations available, depending on the organization's size and geographic locations.

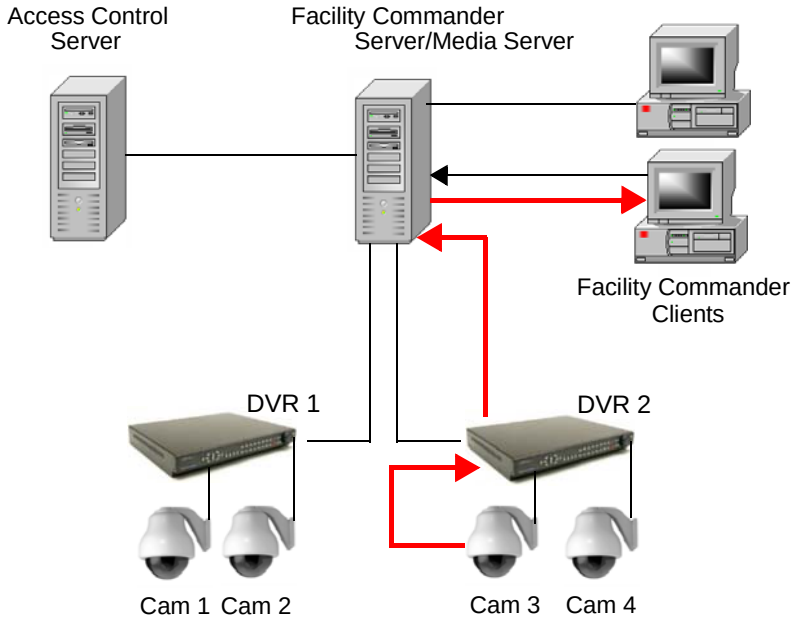
If the site is relatively small or in one central location, then the Media Server can be installed on the Facility Commander Application Server to manage the video services.

In large environments with several geographically distributed sites, it may be undesirable to transmit video clips across the network. In this case, adding a Remote Media Server to the system improves the video transmission process.

Centralized video management

Using a single server configuration, this example describes the events that occur when an operator wants to view video. The Media Server, installed on the Facility Commander Application Server shown in *Figure 1*, has two DVRs with four cameras and two client workstations.

Figure 1. Single server with centralized video



The illustration includes the following process:

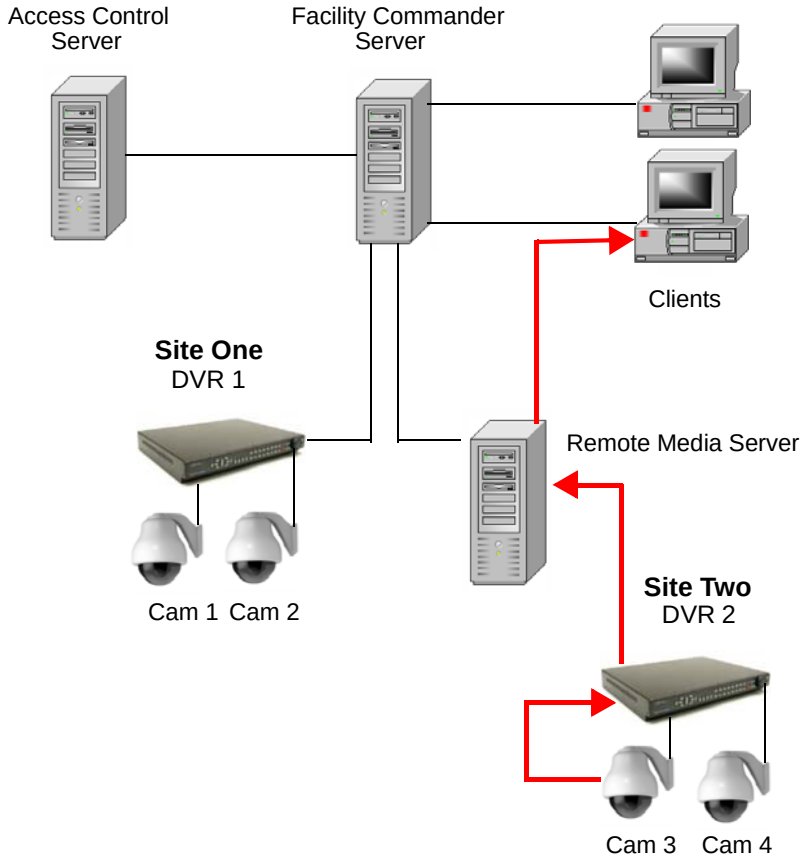
- The client workstation sends a message to the Facility Commander Application Server requesting a connection to camera three.
- The Facility Commander Application Server performs a lookup in the database to identify which DVR the camera is connected to, and which system controls and manages the components. In this example, there is only one Facility Commander Application Server in the network.
- The Facility Commander sends a message to the Media Server (installed on the Facility Commander Application Server) to expect a connection from the client system. The client system opens a TCP/IP connection socket to the Media Server with the server configuration to receive the video stream.
- The Media Server sends compressed video from the associated DVR to the client workstations. Using the Video Viewer application, the operator is able to view the video stream from camera three.

Distributed video management

Using a Facility Commander server with a Remote Media Server, this example describes the events when an operator from a remote location wants to view video. In this example, the Media Server transmits the video from the camera device to the client application.

Figure 2 shows two sites that can be located anywhere — in the same city or different cities. Both sites have two DVRs, four cameras, and two client workstations.

Figure 2. Typical configuration with Remote Media Server



This illustration describes the events when an operator using the Video Viewer on the client system requests video from camera three. This camera device is located at site two, which is managed by the Media Server as shown in *Figure 2*.

- The client system sends a message to Facility Commander server requesting a connection to camera three.
- The Facility Commander server performs a lookup in the database to identify which DVR the camera is connected to, and which system controls and manages the components.
- The Facility Commander sends a message to the remote Media Server to expect a connection from the client system. The client system opens a TCP/IP connection socket to the Media Server with the server configuration to receive the video stream.
- The remote Media Server sends compressed video from the associated DVR to the client workstations. Using the Video Viewer application, the operator is able to view the video stream from camera three.

The Media Server guarantees that local video does not have to be processed by a Facility Commander server located remotely, but by the Remote Media Server that is closer to the client workstations.

Software inventory

All Facility Commander software and documentation are available on CD and DVD discs. The GE Security CD/DVD label information includes the Facility Commander version number and date.

Depending on the operating system and database, there may be additional CD/DVDs from other vendors, such as Microsoft.

Before you start installing any software, verify you have all the required CD/DVDs. Refer to *Table 1* for a list of CD/DVDs supplied by GE Security.

Picture Perfect Users: If you are integrating Picture Perfect with a Facility Commander system, you will also need the Picture Perfect Installation CD for the Picture Perfect External Interface (EIF) package.

Table 1. List of CD/DVDs shipped with Facility Commander

Facility Commander		
Operating System	Linux	AIX
Database	Informix	Informix
Facility Commander Installation DVD	✔	✔
Documentation CD	✔	✔
Video Drivers CD	✔	✔

Refer to the following sections for the list of minimum system requirements:

- *Facility Commander Server* on page 6
- *Remote Media Server* on page 7
- *Client Workstations and Web Browser* on page 8

Minimum system requirements

The size and number of disks that the server requires depends on several factors, such as the database software, size of the Facility Commander database, and RAID requirements, if applicable.

Due to the demanding nature of streaming video over IP, managing multiple video streams from the newly introduced support for SymSuite and VisioWave devices requires increased CPU processing power, memory, and network bandwidth. System-wide video performance is equally affected by the resolution, frame rate, and quality settings of individual video streams and should be adjusted accordingly as supported by the SymSuite and VisioWave devices.

FC servers and/or client workstations used for hosting video devices or viewing multiple video streams should meet the following minimum requirements

- CPU: Dual processor/Dual core at 2.5 GHz or higher
- RAM: 4 GB or higher
- NIC: 1 Gb
- Video: Graphics card hardware support for DirectX 9 with Pixel Shader 3

Facility Commander Server

Install the Facility Commander software and its database on the server system.

Table 2. Facility Commander Server

Facility Commander Server		
Operating System	• Red Hat Linux 5.3	• AIX 6.1
Hardware	• Dell Power-Edge 2900or 2950, Dual processor/Dual core, 2.5 GHz • 4 GB RAM; • Four 73 GB SCSI hard drives • DVD/CD-ROM drive • 160 GB SCSI tape drive • 1 Gb NIC • 56K modem • Mouse • Graphical monitor • Video card	• IBM eServer P5 9111-520 • 2-way 1.5 GHz 64 bit CPUs • 4 GB RAM; • Four 73 GB 10K RPM SCSI disk drives • IDE Slimline DVD drive • 1000 Mbps Ethernet NIC • 56K modem • Mouse • Graphical monitor • Video card
RAID Options	• RAID 1 (two pair hard drives) RAID 10 (four hard drives)	• RAID 1 (two pair hard drives) RAID 10 (four hard drives)
Databases Supported	• Informix 11.5 UC3 or newer	• Informix 11.5 UC3 or newer

Table 2. Facility Commander Server (continued)

Facility Commander Server (continued)	
Additional Information for Linux users	Visit the Web site http://www.redhat.com/hardware to get a complete list of computers and hardware supported by Red Hat. GE Security strongly recommends using the computers it supplies, which have undergone significant reliability testing. If you decide to use non-GE Security supplied computers and require technical support, service is chargeable at normal GE Support rates. Additionally, compatibility with future product releases cannot be guaranteed.

Remote Media Server

The Remote Media Server is an optional component when there are several geographically distributed sites and it may be undesirable to transmit video clips across the network. Refer to:

- *Centralized video management* on page 3
- *Distributed video management* on page 4

The media server software is installed on a separate, dedicated computer. The media server connects to remote DVRs and processes the requests for video tagging and video playback. The Facility Commander server would normally process the requests in a smaller environment.

The media server runs the media software; does not have a user interface; and does not contain a database. In addition, some digital video software interfaces are Windows DLL-dependent. In those cases, a Windows-based Media Server is required to play video.

Table 3. Remote Media Server Requirements

Remote Media Server		
Operating System	Windows 2008 Server Windows XP Professional SP3	Red Hat Linux 5.3
Hardware	• Dell Power-Edge 1900, Dual processor/ Dual core, 2.5 GHz • 80 GB hard drive • 4 GB RAM; • DVD/CD-ROM drive • 1 Gb NIC • 56K modem • mouse • graphical monitor • Video card • Alternative: Dell Power-Edge 2900 or 2950	• Dell Power-Edge 1900, Dual processor/Dual core, 2.5 GHz • 80 GB hard drive • 4 GB RAM; • DVD/CD-ROM drive • 1 Gb NIC • 56K modem • mouse • graphical monitor • Video card • Alternative: Dell Power-Edge 2900 or 2950

Client Workstations and Web Browser

The following section lists the minimum system requirements for the client workstations and Web Browser.

Table 4. Client Workstations and Web Browser

Web Browser or Client Workstation	
Operating System	Windows XP professional SP3 or Windows Vista SP2
Web Browser	Internet Explorer 6.0 with Service Pack 1 or later
Hardware	• Optiplex, Dual processor/Dual core, 2.5 GHz • 80 GB hard drive • 2 GB RAM • DVD/CD-ROM drive • 1 Gb NIC • 56K modem • mouse • graphical monitor • Video: Graphics card hardware support for DirectX 9 with Pixel Shader 3 • Adobe Acrobat reader

Checklist

A Facility Commander system consists of a server, client workstations, and optional Media servers for distributed video.

In addition, consider the following items:

- When integrating Facility Commander with Picture Perfect, Facility Commander can be installed on a standalone server or can be installed on the Picture Perfect server.
- For Facility Commander standalone server applications to work with Picture Perfect, you must install the Picture Perfect External Interface (EIF) package on the Picture Perfect server.

Review the checklist carefully to determine the tasks you need to complete to successfully install Facility Commander.

Some of the steps are optional and can be installed later, such as the Remote Media Server. Required (REQ) fields are indicated by a check mark.

Table 5. Checklist for Setup and Installation

Step	REQ	Action
	✔	Select Operating System
		• Install Linux using the product vendor CDs. Refer to *Installing Linux* on page 23.
		• Install AIX using the product vendor CDs. Refer to *Installing AIX* on page 33.
	✔	Select Database - Facility Commander installed on a standalone application server
		• Install the Informix database, using the Facility Commander Installation DVD. Refer to *Linux Informix Database* on page 38 or *AIX Informix Database* on page 45.
		• Install the Informix Schema, using the Facility Commander Installation DVD. Refer to *Installing the Linux Informix Schema* on page 42 or *Installing the AIX Informix Schema* on page 54.
	✔	Install Facility Commander and Components
		• Install Facility Commander server software using the Facility Commander DVD. Refer to *Installing Facility Commander applications* on page 57.
		• Install Facility Commander license. Refer to *License Manager* on page 63.
		• Install the Remote Media Server software. Refer to *Installing Remote Media Servers* on page 66.
		• Install Facility Commander client software on all workstations. Refer to *Installing Client Workstations* on page 69.

Connecting hardware devices

Any hardware devices, such as client systems, digital video devices, modems and cables, do not have to be connected before installing Facility Commander software.

Before connecting hardware devices, refer to the following sections:

- *Connecting server systems* on page 10
- *Connecting intercom hardware* on page 11
- *Serial Cable Assembly* on page 13
- *Connecting analog CCTV switchers* on page 13

Connecting server systems

To connect the server hardware, follow these steps:

1. Connect the monitor, keyboard, and mouse to the appropriate ports on the back of the server.
    - If you are using a graphics card, connect the monitor to the video port. Use the following display settings:
    - Resolution: 1024 x 768
    - Colors: True color (32-bit)
2. Connect client workstations. Consult your site network administrator before connecting any devices to an existing network.
3. Reserve serial port COM2 on the back of the server for an external support modem, if an internal modem is not present.

Connecting intercom hardware

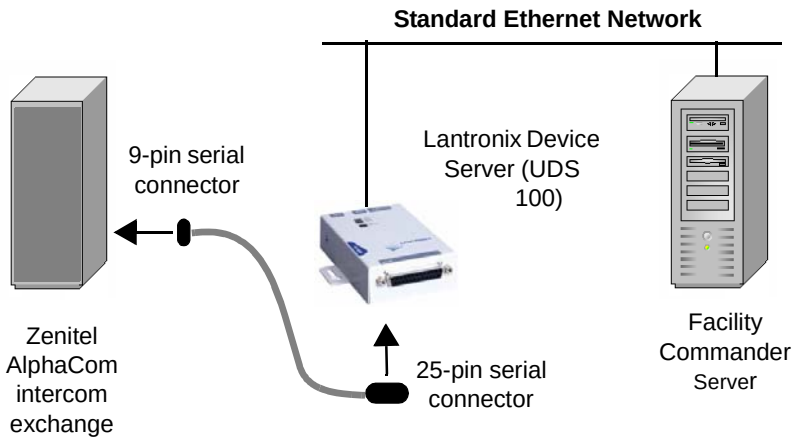
Facility Commander communicates with other systems such as an intercom exchange over the network (LAN/WAN). Therefore, the intercom exchange must be connected to the network. Because it is a serial device, there are two additional items needed for network connectivity:

- a Lantronix UDS100 converter box, which converts RS-232 to Ethernet
- a serial cable to connect the intercom exchange to the Lantronix converter box

A static IP address must be defined for the intercom exchange and it is set in the Lantronix box. Configure an IP address on the Lantronix box by using the Lantronix-supplied software.

To configure Facility Commander to communicate with the Intercom system, use the HTML Configuration pages (for instructions, refer to the *Facility Commander Administration Guide*).

Figure 3. Intercom Hardware Layout



To connect and configure Alphacom Intercom hardware, follow these steps:

1. Connect the 25-pin end of the serial cable to the RS-232 port on the Lantronix unit.
   - This non-standard cable is available from GE Security (part number: 320575001). Refer to *Figure 4, Serial Cable Assembly* for cable pinouts.
2. Connect the 9-pin end of the serial cable to the data port (default is port 1, not service port 0) on the AlphaCom system.
3. Connect the Lantronix unit to the network using a standard Ethernet cable.
4. Follow the instructions supplied with the Lantronix unit for installing the DeviceInstaller software. A fixed IP address must be assigned to the Lantronix unit.
5. Continue following the instructions to search for active units and add them to the manage list.
6. Select the unit from the list and click the **Manage** icon.
7. Click the **Web Configuration** icon to display the configuration screen in the Web browser.
   - If the screen does not display after one minute, you may need a different version of the Java runtime installed. Download the file: **`J2SE v 1.6.0_10 JRE`** from the Sun Microsystems Web site: www.java.sun.com

- Install the software and set JRE as the default setting for the browser. Try the Web Configuration again.

8. Click **Port Properties**. Enter the information described in *Table 6*.

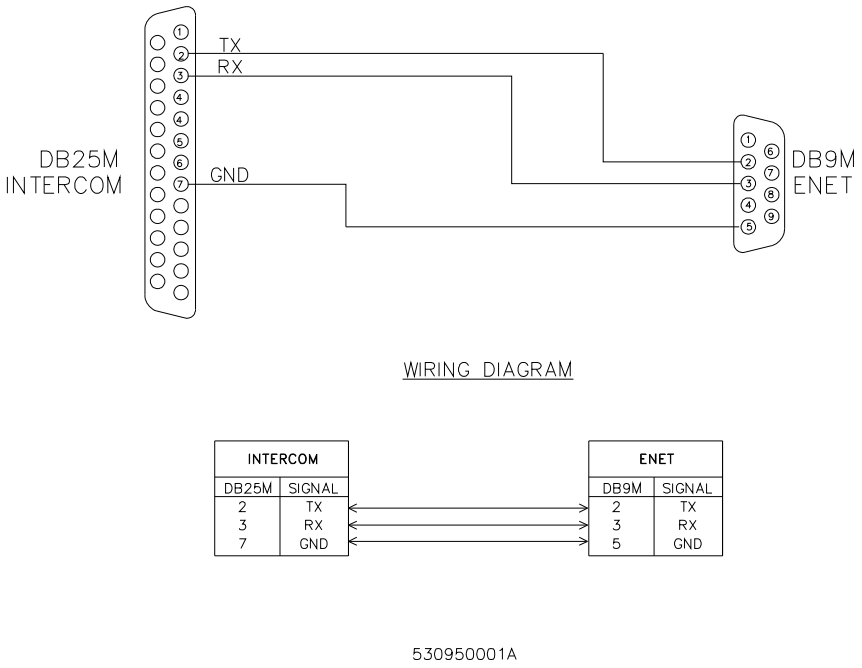
Table 6. Port Properties Settings

Field Name	Parameters
Serial Port Settings	
Serial Protocol	RS-232
Speed	9600
Character Size	7
Parity	Even
Stop Bit	1
Flow Control	None
Packing Algorithm	
Packing Algorithm	Enable
Idle Time	Transmit12ms
Trailing Characters	None
Send Immediate After Sendchars	Enable
Sendchar Define 2-Byte Sequence	Disable
Send Character 01	0d
Send Character 02	00

Serial Cable Assembly

The wiring diagram shown in *Figure 4*, *Serial Cable Assembly* shows the 25-pin and 9-pin end of the non-standard cable. This non-standard cable is available from GE Security (part number: 320575001).

Figure 4. Serial Cable Assembly

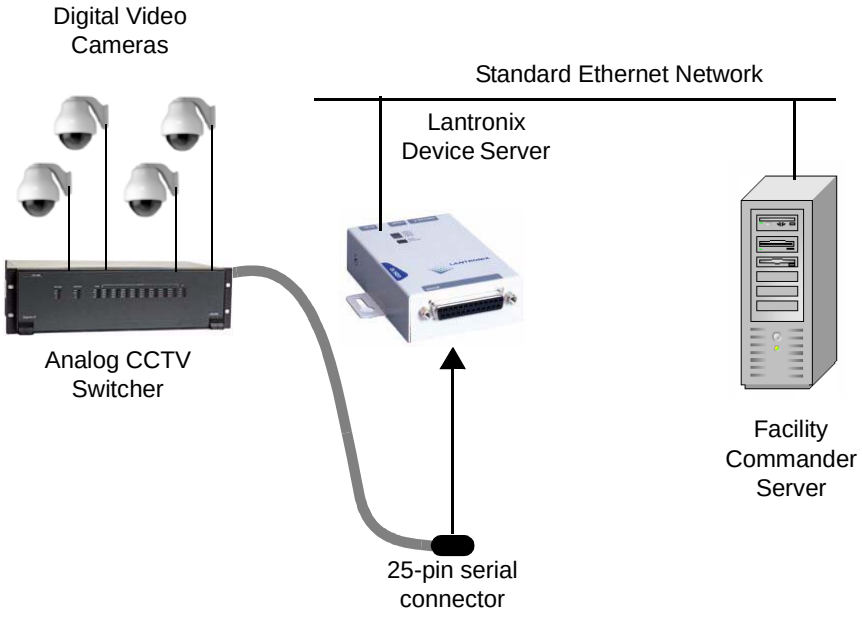


When all hardware connections and configuration are complete, refer to the *Checklist* on page 9 to determine how to proceed with software installation.

Connecting analog CCTV switchers

Facility Commander can communicate with other devices, such as analog CCTV switchers, shown in *Figure 5*, over a network (LAN/WAN).

Figure 5. Analog CCTV Switcher Layout



The analog CCTV switcher must be connected to the network and because it is a serial device, two additional items are needed for network connectivity:

- a Lantronix UDS100 converter box, which converts RS-232 to Ethernet
- a serial cable to connect the intercom exchange to the Lantronix converter box

A static IP address must be defined for the analog CCTV switcher and it is set in the Lantronix box. Configure an IP address on the Lantronix box by using the Lantronix-supplied software.

The Lantronix device is configured using Lantronix-supplied software. To configure Facility Commander to communicate with the switcher, use the HTML Configuration pages (for instructions, refer to the *Facility Commander Administration Guide*).

To connect and configure the Kalatel KTD-348 and KTD-440 Analog CCTV Switchers, follow these steps:

1. Attach the 25-pin end of the serial cable to the Lantronix box. The other end of the cable is hard-wired into the switcher. See *Figure 6* and *Figure 7* for cable pinouts.

   Call GE Security Customer Support for specific wiring instructions, which are model-dependent.
2. Connect the Lantronix unit to the network using a standard Ethernet cable.
3. Follow the instructions supplied with the Lantronix unit for installing the DeviceInstaller software. A fixed IP address must be assigned to the Lantronix unit.
4. Continue following the instructions to search for active units and add them to the manage list.
5. Select the unit from the list and click the **Manage** icon.

6. Click the **Web Configuration** icon to display the configuration screen in the Web browser.
   - If the screen does not display after one minute, you may need a different version of the Java runtime installed. Download
     `J2SE v 1.6.0_10 JRE` from Sun at: www.java.sun.com
     Install the software and set JRE as the default setting for the browser. Try the Web Configuration again.
7. Click **Port Properties**. Enter the information listed in *Table 7*.

Figure 6. KTD-348 cable pinouts

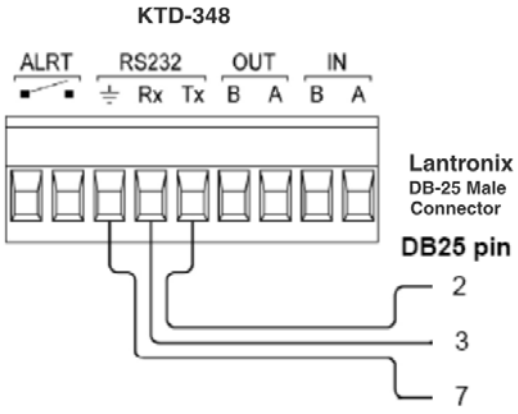


Figure 7. KTD-440 cable pinouts

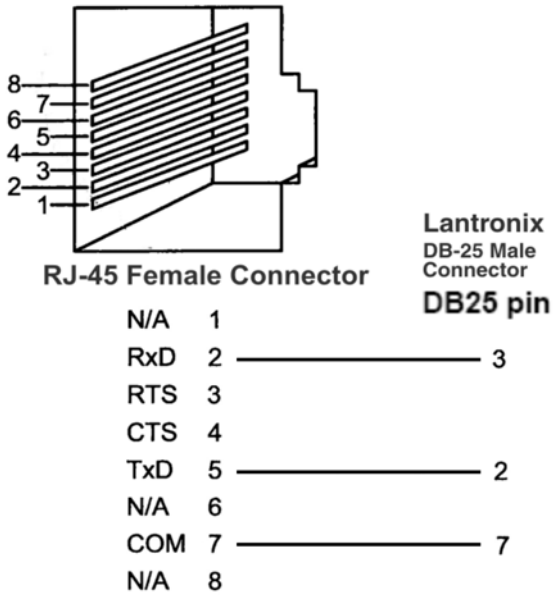


Table 7. Port Properties settings

Field	Parameter
Serial Port Settings	
Serial Protocol	RS-232
Speed	9600
Character Size	8
Parity	Even
Stop Bit	1
Flow Control	None
Packing Algorithm	
Packing Algorithm	Enable
Idle Tim	Force Transmit12ms
Trailing Characters	None
Send Immediate After Sendchars	Enable
Sendchar Define 2-Byte Sequence	Disable
Send Character 01	7e
Send Character 02	7e

When all hardware connections and configuration are complete refer to the *Checklist* on page 9 to determine how to proceed with software installation.

Chapter 2 Upgrading Facility Commander

This chapter covers the information needed to upgrade existing Facility Commander systems to the latest version.

In this chapter:

Upgrading from version 2.1 to 2.2

When upgrading to the latest version of Facility Commander, the host server and Linux media server(s) will be new installations. The windows standalone media servers, clients, and workstations can either be new installations or upgrades depending on the operating system.

Facility Commander 2.2 uses Linux 5.3 or AIX 6.1 with Informix 11.5 database. Therefore, the Informix database needs to be reinstalled, and then the data in the database repository needs to be migrated from the old database to the new one. The following provides general information and the steps required to accomplish the data migration.

Migration background Information

Deployment

There are four modules (shell scripts) used in the data migration process listed in *Table 8* on page 18. These scripts are grouped for two purposes, each with their own deployment shell scripts:

- FC_22_Migration_Source_Deployment.sh
- FC_22_Migration_Target_Deployment.sh

All scripts are located on the Facility Commander 2.2 Installation DVD in the `dbmigration` folder (directory). Each deployment script must be executed from the `dbmigration` folder. The deployment scripts will perform the following operations:

- Create the `/bud/FC_DataExport` destination directory tree on the server if it does not already exist
- Create and populate the log of the script's execution
- Remove any existing migration script files
- Copy the appropriate shell scripts and supporting files into the destination directory

General

There are four modules (shell scripts) used in the data migration process. Refer to *Table 8*.

Each script is executed from the command line in a terminal window.

Type: `sh <script name>.sh`

Each script will generate a log file as a result of its execution. The log file name is `<script_name>.log`

Table 8. Migration scripts

Name	Shell script
Table Rows Count	FC_Count_Table_Rows.sh
Table Data Extract	FC_Extract_Table_Data.sh
Table Data Loader	FC_Populat_Table_Data.sh
Table Rows Truncate	FC_Truncat_Table_Rows.sh

Operation of shell scripts

The shell scripts operate in the following manner:

Table Data Extract

The Table Data Extract shell script extracts the data rows in each table found the Informix database to a flat data (.dat) file. The script generates the `FC_Extract_Tables_List.ctl` control file. This control file is created based on the contents of the database being accessed by the script and is subsequently used by the Table Data Loader script.

Table Data Loader

The Table Data Loader script populates the data from each flat file created by the Table Data Extract script into the corresponding table in the Informix database. This script uses the control file created by the Table Data Extract script to ensure all extracted data is reloaded.

Table Rows Truncate

The Table Rows Truncate script deletes all rows in each table found the Informix database. This script is used to remove loaded data if the Table Data Loader script fails to deliver a full load.

Table Rows Counter

The Table Rows Counter script counts the number of rows in each table found the Informix database. This script is used to verify the table data extract and loader scripts.

Database migration

Note: Note: Perform the database migration prior to installing Facility Commander 2.2 server installation.

There are two steps required to successfully migrate your database information from FC 2.1 to FC 2.2.

- Extract the table data from the FC 2.1 database
- Load the extracted table data into the new FC 2.2 database

Extract table data from the FC 2.1 database

To extract the table data from the old Informix database:

1. Login to the FC 2.1 host (source) server with the root user account.
2. Mount the FC 2.2 Installation DVD.
3. Change directories from the command line in a terminal window. Type one of the following commands, depending on how the DVD was mounted:

   ```
   cd /media/dvd/dbmigration
   ```

4. Run (execute) the Migration Source Deployment shell script from the command line in the same terminal window by typing the following command:

   sh FC_22_Migration_Source_Deployment.sh

5. Change directories from the command line by typing the following command:

   ```
   cd /bud/FC_DataExport
   ```

6. Run (execute) the Table Data Extract shell script from the command line in the same terminal window. terminal window by typing the following command:

   ```
   sh FC_Extract_Table_Data.sh
   ```

   As the script runs it displays its progress providing table names and row counts of data extracted. When the script is complete, it displays the total number of tables processed.

7. After completing the table data population, check the log file for errors.

   The `FC_Count_Table_Rows.sh` shell script can be run to derive the contents of the source Informix database and ensure all data was extracted. There is a minimum of 67 tables that should be processed during the data extraction. Refer to, *Table Rows Count script* on page 22.

Load the extracted table data into the new FC 2.2 database

The contents of the directory (/bud/FC_DataExport), especially the flat data (.dat) files and the FC_Extract_Tables_List.ctl file must to be copied to the same directory on the FC 2.2 host (target) server.

If the target server is a new machine, the files can be transferred directly using a Linux/Unix utility such as ftp. If the FC Host server is being upgraded, these files will need to be temporarily stored on some form of removable media such as a memory stick or USB drive. The removable media will be used to transfer the files back onto the upgraded server. The Linux and AIX upgrades are destructive upgrades, erasing all files on the server.

To load the extracted table data into the new FC 2.2 database:

1. Login to the FC 2.2 host (target) server with the root user account.
2. Mount the FC 2.2 Installation DVD.
3. Change directories from the command line in a terminal window. Type one of the following commands, depending on how the DVD was mounted:

   ```
   cd /media/dvd/dbmigration
   ```

4. Run (execute) the Migration Source Deployment shell script from the command line in the same terminal window by typing the following command:

   sh FC_22_Migration_Target_Deployment.sh

5. Change directories from the command line by typing the following command:

   ```
   cd /bud/FC_DataExport
   ```

6. Copy the saved flat data (.dat) files and the FC_Extract_Tables_List.ctl file to this directory.

7. If you have installed the Facility Commander Server, shut down the service.

   For Linux servers, type the following command:

   ```
   service facilityCommander        stop
   ```

   For AIX servers, type the following command:

   ```
   sh /var/FacilityCommanderServer/server/bin/FCShutdown.sh
   ```

   When the service has successfully shut down, [OK] will appear in the terminal window. If it fails to shut down (because it is already shut down), [FAILED] will appear in the terminal window.

8. Run (execute) the Table Data Loader shell script from the command line in the same terminal window by typing the following command:

   ```
   sh FC_Populat_Table_Data.sh
   ```

   As the script runs it displays its progress providing table names and row counts of data loaded. When the script is complete, it displays the total number of tables processed.

9. After completing the table data load, check the log file for errors.

   The `FC_Count_Table_Rows.sh` shell script can be run to derive the contents of the source Informix database and ensure all data was extracted. There is a minimum of 67 tables that should be processed during the data load. Refer to, *Table Rows Count script* on page 22.

Table Data Populate log file errors

In the event that the data is not completely loaded (populated) and/or there are errors recorded in the `FC_Populat_Table_Data.log` file, the loaded data can be removed using the Rows Truncation shell script.

For example, if the Facility Commander Server was licensed and run at any time before the Table Data Loader is run, the server will probably have loaded some data (inserted rows) in to various tables in the Informix database. The log file will show error messages with "Unique constraint … violated. 100: ISAM error: duplicate value for a record with unique key." The Table Data Loader script will need to be rerun.

To run the Table Rows Truncate script:

1. Login to the FC 2.2 host (target) server with the root user account.
2. Run the shell script by typing the following commands:

   ```
   sh FC_Truncat_Table_Rows.sh
   ```

   As the script runs it will display its progress providing table names and row counts of rows deleted, and when complete, a total number of tables processed.

   Note: On AIX, this script is unable to run as efficiently as on Linux. On Linux, it will complete in one pass or execution. On AIX, it will have to be run multiple times until the number of tables truncated is zero. The FC_Count_Table_Rows.sh shell script can be run after each time the Table Rows Truncate script is run to determine that all of the tables have zero or no rows.

3. After completing the Rows Truncation, check the log file for errors.

   The `FC_Count_Table_Rows.sh` shell script can be run to derive the contents of the source Informix database and ensure all data was extracted. There is a minimum of 67 tables that should be processed during the data load. Refer to, *Table Rows Count script* on page 22.

Table Rows Count script

To verify Data Extraction, Population or Truncation, run the Table Rows Count shell script to confirm the results of each step above.

To run the Table Rows Count script:

1. Login to the FC 2.2 host (target) server with the root user account.
2. Run the shell script by typing the following command:

   ```
   sh FC_Count_Table_Rows.sh
   ```

   As the script runs it will display it's progress providing table names and row counts of rows data deleted, and when complete, a total number of tables processed.

Obtaining the License Key

A new Facility Commander license key is not required when upgrading from version 2.1 to version 2.2. The license key used with Facility Commander version 2.1 is used when upgrading to version 2.2.

The license key is stored in a file called **`license.xml`**. Copy the file to the root directory (Linux/AIX is **`/`**) so that it can be copied into the resources directory after the upgrade. Or, print or view the file and write down the current 40-character license key.

Upgrading remote media servers

Linux remote media servers running Facility Commander 2.1 cannot be upgraded to Facility Commander 2.2 because of the new Linux 5.3 operating system. Refer to *Installing Remote Media Servers* on page 66 for installation instructions.

Windows remote media servers running Facility Commander 2.1 can be upgraded to Facility Commander 2.2. The process requires uninstalling the previous version and installing the new version. Refer to *Installing Remote Media Servers* on page 66 for installation procedures

Upgrading client workstations

Client workstations running Facility Commander 2.1 can be upgraded to Facility Commander 2.2. The process requires uninstalling the previous version and installing the new version. Refer to *Installing Client Workstations* on page 69.

Chapter 3 Installing Linux

This chapter includes the information needed to install and configure the Linux 5.3 operating system.

In this chapter:

Overview

If your Facility Commander 2.2 server was purchased from GE Security, the Linux operating system and Facility Commander software are preloaded on it.

If not, start below and follow the instructions to install and configure Red Hat Linux 5.3 software.

Installing Red Hat Linux 5.3 on a Facility Commander 2.2 Application Server

The following procedures are for the installation of Red Hat Linux 5.3 on a standalone Facility Commander Application Server.

Typically accept the default selections as instructed in the steps that follow. If you are in doubt, consult with your system administrator.

Click Release Notes for information on this version of Red Hat Linux.

To install Red Hat Linux, follow these steps:

1. Insert the Red Hat Linux 5.3 Operating System DVD, and then boot the computer. The boot prompt displays.
2. At the boot prompt, click Enter to proceed and wait for the process to load the basic operating system drivers.
3. The CD Found dialog box opens, press tab or use the right arrow key to select SKIP. Press enter or the spacebar to start the installation.
4. The Red Hat Welcome page opens. Click Next.
5. The Language Selection page opens. Choose the appropriate language, and then click Next.
6. The Keyboard Configuration page opens. Choose the appropriate keyboard configuration, and then click Next.
7. The Installation Number dialog box opens. Click Skip entering Installation Number, and then click OK.
8. The Skip dialog box opens, click Skip.
9. The installation type page opens. Click Install Red Hat Enterprise Linux Server, and then click Next.
10. The hard drive partition page opens. Select all disk drives available in your system, and then click Review and modify partitioning layout. Click Next.
11. A warning dialog box opens asking you to confirm your selections. Click Yes.
12. The Disk Setup page opens.

13. If you are reinstalling an existing system, the existing LVM volume groups must be deleted. To do this, select a LVM volume group from the list on the Disk Setup page, and then click Delete.

    The Confirm Delete dialog box opens. Click Delete. The LVM volume group is removed from the list.

    Repeat the above procedure for all remaining LVM volume groups.

14. On the Disk Setup page, delete each partition on a specific drive until all disk space is shown as free space. To do this, select a partition displayed in the list, and then click Delete.

    The Confirm Delete dialog box opens. Click Delete. The partition is removed from the list.

15. Select the hard drive displayed in the list, and then click New.

    Note: It will be necessary to create a boot partition and swap space partition. The remaining space from the physical volume(s) can be assigned to a volume group. The volume group is then partitioned into Logical Volumes using the LVM. See *Figure 8* and *Figure 9*, for more detailed sizing information.

16. The Add Partition dialog box opens.
17. Create the boot partition as follows:
    - Mount Point: /boot
    - File System Type: ext3
    - Allowable Drives: Select the hard disk on which you are installing the Linux operating system.
    - Size (MB): 100
    - Additional Size Options: Fixed size
    - Click the Force to be a primary partition check box.
18. Click OK. You are returned to the Disk Setup page.
19. Click New again.
20. Create the swap partition as follows:
    - Mount Point: Leave blank.
    - File System Type: swap
    - Allowable Drives: Select the hard disk on which you are installing the Linux operating system.
    - Size (MB): Refer to *Table 9*, *Physical volume sizing (boot and swap)* on page 25.
    - Additional Size Options: Fixed size
    - Click the Force to be a primary partition check box.

Table 9. Physical volume sizing (boot and swap)

Logical/physical drive	Partition	Recommended size	
sda or hda	boot	100 MB	
		RAM	**Swap space**
	swap	Less than 1 GB	2 times the size of RAM
		1 GB to 2 GB	1.5 times the size of RAM
		2 GB to 8 GB	Equal to the size of RAM
		More than 8 GB	0.75 times the size of RAM

21. Click OK. You are returned to the Disk Setup page.
22. Click New again.
23. Create the rootvg volume group as follows:
    - Mount Point: Leave blank.
    - File System Type: physical volume (LVM)
    - Allowable Drives: The hard disk on which you are installing the Linux operating system.
    - Size (MB): Leave the default value.
    - Additional Size Options: Fill to maximum allowable size
    - Click OK. You are returned to the Disk Setup page.
24. Click (highlight) LVM PV, and then click LVM.
25. The Make LVM Volume Group page opens. Create the rootvg volume group as follows:
    - Volume Group Name: Rename it to rootvg (must be spelled exactly as shown in lower case).
    - Physical Extent: 32 MB.
    - Physical Volumes to Use: Select the hard disk on which you are installing the Linux operating system.
    - Click Add to create necessary logical volumes.
26. The Make Logical Volume dialog box opens. Create Logical Volumes LogVol00 through LogVol10 using the values listed in *Table 10, Logical volume sizing* on page 26.

Table 10. Logical volume sizing

Volume group	Logical volume	Enter mount point	Size required (MB)	Size to enter (MB)
rootvg	LogVol00	/	4,096	5,000
	LogVol01	/home	512	600
	LogVol02	/tmp	2,048	2,400
	LogVol03	/usr	6,144	7,000
	LogVol04	/var	4,096	4,800
	LogVol05	/bud	32,768	36,000
	LogVol06	/db1	2,048 (S) 2,048 (M) 2,048 (L)[1]	2,400 (S) 2,400 (M) 2,400 (L)
	LogVol07	/db2	2,048 (S) 2,048 (M) 2,048 (L)	2,400 (S) 2,400 (M) 2,400 (L)
	LogVol08	/db3	256 (S) 384 (M) 512 (L)	400 (S) 500 (M) 700 (L)
	LogVol09	/db4	4,096 (S) 12,288 (M) 32,768 (L)	4,700 (S) 13,800 (M) 36,500 (L)
	LogVol10	/log	2,048 (S) 4,096 (M) 8,192 (L)	2,400 (S) 4,700 (M) 9,300 (L)

1. S = Standard database, M = Medium database, L = Large database

27. After entering each logical volume, click OK. You will be returned to the Make LVM Volume Group page. Repeat step 26 and step 27 for each logical volume entry.
28. When you have finished defining your partitions, click OK on the Make LVM Volume Group page to to accept your settings. You are returned to the Disk Setup page. Click Next to continue.

29. The GRUB Boot Loader Configuration page opens. Accept the default settings, and then click Next.
30. The Network Configuration page opens. Under Network Devices, click Edit to set parameters for the network interface. The Edit Interface dialog box opens.

    Configure the Edit Interface dialog as follows:

    Note: The Facility Commander host must have a static IP address. It does not work with DHCP.

    - Select Enable IPv4 support check box. Click Manual configuration.
    - Deselect Enable IPv6 check box.

    Click OK. You are returned to the Network Configuration page. Under Hostname, Set the hostname, click manually, and then enter the hostname.

CAUTION: Do not leave the hostname field blank, it must be set to an alphanumeric value before Facility Commander is installed!
Keep the following in mind:

- Use LOWERCASE a through z, and/or 0 through 9. Do NOT use UPPERCASE.
- Use the simple machine name, such as `fchost1`, not the fully qualified name.
- The host name may not be more than 16 characters in length.
- Do not use host names containing the dash character (-).
  Informix Dynamic Server 11.5 does not recognize this as a valid character and will prevent the database from starting.
- Do not use host names containing the underscore character (_).
  This is not a valid character in the web server running on the Facility Commander host.

Under Miscellaneous Settings, configure the Gateway and Primary DNS, if applicable, and then click Next.

- If you fail to provide a Primary DNS, an error message dialog box opens. Depending on your network environment, this could cause future problems. If you do not know what this should be, consult your Network Administrator. Click Continue on the error message dialog box.

31. The Region Selection page opens. Select the region corresponding to the server location from the drop-down menu. Click the System clock uses UTC check box, and then click Next.

    Note: Note: Selecting three letter time zone designators ("EST", "PST", "CST", etc.) cause a problem with daylight savings time. Instead of using these designators, the full “America/New York", “America/San Francisco", etc should be used.

    If it is necessary to adjust the date and/or time, use the **`dateconfig`** command when the Linux installation is complete.

32. The Set Root Password page opens. In the Root Password field, enter a password (minimum six characters) for **`root.`** In the Confirm field, enter the password again, and then click Next.

    You will need this password later when you install the Informix database (See *Linux Informix Database* on page 38).

33. The Package Group Selection window opens. Click Customize now to open the Package Selection page.

    Select the following packages, and then click Next.

    Desktop Environments:

    - GNOME Desktop Environment

    Applications:

    - Editors
    - Graphical Internet
    - Office/Productivity
    - Sound and Video

    Development:

    - Development Tools
    - Legacy Software Development
    - X Software Development

    Servers:

    - Legacy Network Server (click on Option packages and select all options)
    - Mail Server
    - Printing Support
    - Server Configuration Tools

    Base System:

    - Administration Tools
    - Base
    - X Windows Systems

    Languages:

    - No selection

34. After a check of dependencies in packages is performed, the About to Install Red Hat Enterprise Linux Server page opens. Click Next to begin the installation of Red Hat Linux 5.3.

    Note: *If, for some reason, you do not wish to continue with the installation process, this is your last opportunity to safely cancel the process and reboot your machine. Once you press the Next button, partitions will be written and packages will be installed. If you wish to abort the installation, you should reboot now before any existing information on any hard drive is rewritten.*

    To cancel this installation process, press your computer's Reset button or use the [Control]-[Alt]-[Delete] key combination to restart your machine.

35. After installation, the Congratulations, the installation is complete page opens. Remove any media used during the installation process, and then click Reboot.
36. When the reboot is complete, the Welcome page opens. Click Forward to continue.
37. The License Agreement page opens. Click Yes, I agree to the License Agreement, and then click Forward.

38. The Firewall page opens. Select Firewall: Disabled, and then click Forward. A confirmation dialog box opens. Click Yes to continue.
39. The SELinux Setting page opens. Select SELinux: Disabled, and then click Forward. A confirmation dialog box opens. Click Yes to continue.
40. The Kdump page opens. Accept the default settings, and then click Forward.

    Optional: If you want the host to synchronize its clock with a remote time server, click the Network Time Protocol tab.

    - Check the Enable Network Time Protocol check box and use the drop-down menu to select a time server.

41. The Set Up Software Updates page opens. Select No, I prefer to register at a later time, and then click Forward. A confirmation dialog box opens, click No thanks, I'll connect later. The Finish Updates page opens, Click Forward.

    Optional:To register with Red Hat and provide a Red Hat login:

    - If you have already registered with Red Hat Network, click Yes, I'd like to register now. Click Forward and the Choose Server page opens. Select your server and click Forward to continue.
      - If you provided your Red Hat login account information, the **Activate** dialog opens.
      - Enter the subscription number in the appropriate field. Otherwise, select I do not have a subscription number. Click Forward to continue.
    - If you have never registered, choose Why Should I Connect to RHN? The Why Register dialog box opens, providing registration information.

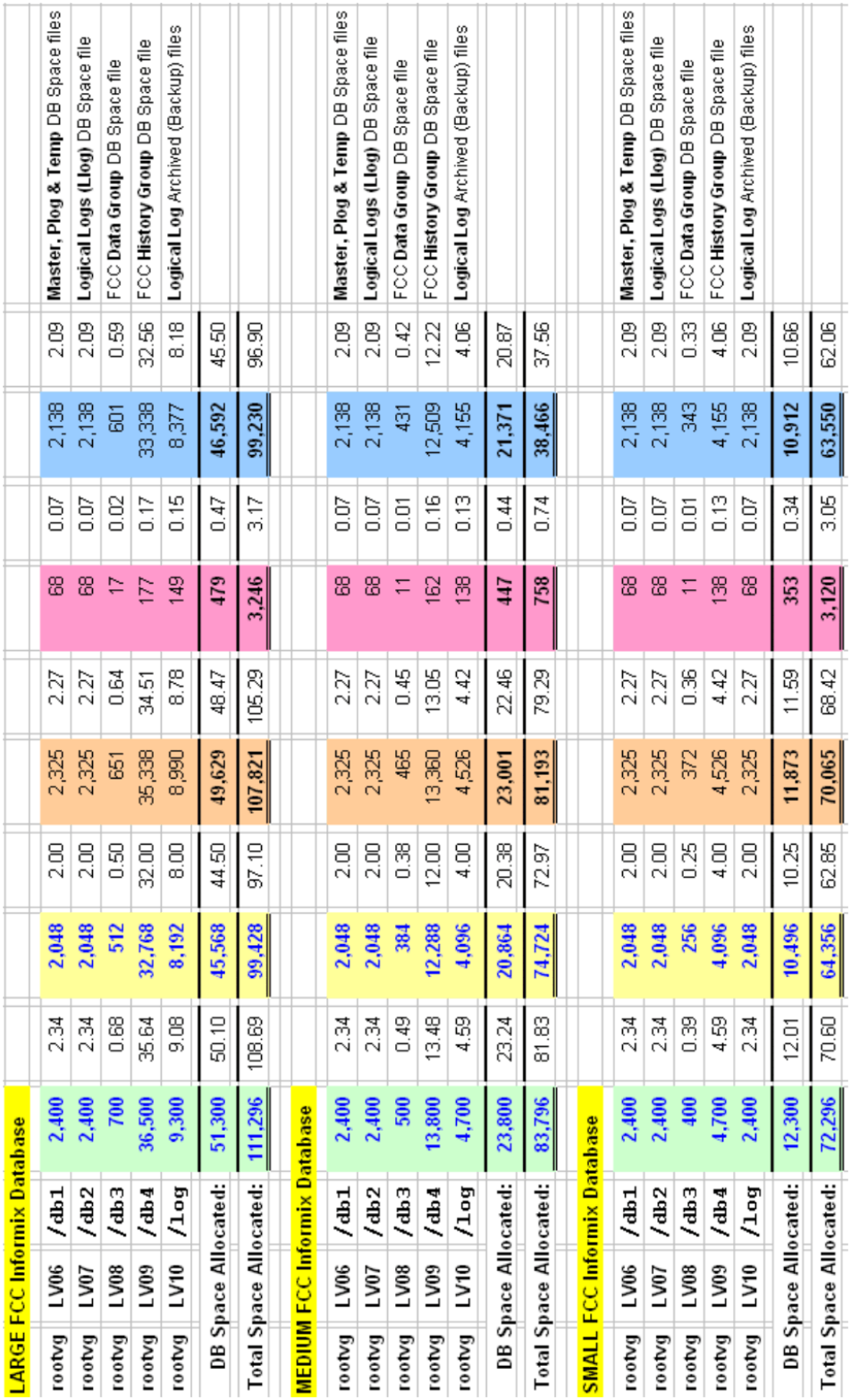
42. The Create User page opens. Since a user account will be created during the installation of the Facility Commander application, it is not necessary to create an account now. Click Forward to continue. A confirmation dialog box opens, click continue.
43. The Sound Card page opens. Click Forward to continue.
44. The Additional CDs page opens, There are no required add-ons for Facility Commander. Click Forward to continue.
45. The Finish Setup dialog box opens. Click OK to reboot the server.
46. The set up for Red Hat Linux is now complete and you may proceed to install the Informix database. Refer to *Linux Informix Database* on page 38

Figure 8. RHEL ES 5.3 File system disk space allocations

Physical RAM (GB)		(GB)	Recommendation for Swap Space Allocation
	<	1.00	2 times the size of RAM
1.00	≥	2.00	1.5 times the size of RAM
2.00	≥	8.00	Equal to the size of RAM
8.00	+		3/4 times the size of RAM

--- Disk Space Allocations ---			Minimum Space Sizes to Enter		Minimum Space Sizes Required		Allocated Space to Superuser		Used Space by Linux Install		Available Space to Applications		Purpose of Disk Space
Volume Group	Logical Volume	Mount Points	(MB)	(GB)	(MB)	(GB)	(MB)	(GB)	(MB)	(GB)	(MB)	(GB)	
swap			4,096	4.00	4,096	4.00	4,094		-		4,094	4.00	Min. Linux Swap Space
boot		/boot	100	0.10	100	0.10	99	0.10	12	0.01	83	0.08	RH Linux OS Boot Area
rootvg	LV00	/	5,000	4.88	4,096	4.00	4,836	4.72	342	0.33	4,245	4.15	If /tmp, /usr, /var not have LV's
rootvg	LV01	/home	600	0.59	512	0.50	558	0.54	17	0.02	513	0.50	they will be bundled under /.
rootvg	LV02	/tmp	2,400	2.34	2,048	2.00	2,325	2.27	68	0.07	2,138	2.09	Temporary Files
rootvg	LV03	/usr	7,000	6.84	6,144	6.00	6,758	6.60	1,967	1.92	4,443	4.34	RH Linux OS Environment Files
rootvg	LV04	/var	4,800	4.69	4,096	4.00	4,650	4.54	184	0.18	4,226	4.13	Facility Commander App's Files
rootvg	LV05	/bud	36,000	35.16	32,768	32.00	34,872	34.05	177	0.17	32,896	32.13	Informix DB & Support Backup files
rootvg Space Allocated:			55,800	54.49	49,664	48.50	53,999	52.73	2,755	2.69	48,461	47.33	
Total Space Allocated:			59,996	58.59	53,860	52.60	58,192	56.83	2,767	2.70	52,638	51.40	

Figure 9. RHEL ES 5.3 Database disk space allocations



LARGE FCC Informix Database													
rootvg	LV06	**/db1**	2,400	2.34	2,048	2.00	2,325	2.27	68	0.07	2,138	2.09	**Master, Plog & Temp** DB Space files
rootvg	LV07	**/db2**	2,400	2.34	2,048	2.00	2,325	2.27	68	0.07	2,138	2.09	**Logical Logs (Llog)** DB Space file
rootvg	LV08	**/db3**	700	0.68	512	0.50	651	0.64	17	0.02	601	0.59	FCC **Data Group** DB Space file
rootvg	LV09	**/db4**	36,500	35.64	32,768	32.00	35,338	34.51	177	0.17	33,338	32.56	FCC **History Group** DB Space file
rootvg	LV10	**/log**	9,300	9.08	8,192	8.00	8,990	8.78	149	0.15	8,377	8.18	**Logical Log** Archived (Backup) files
		DB Space Allocated:	51,300	50.10	45,568	44.50	49,629	48.47	479	0.47	46,592	45.50	
		Total Space Allocated:	111,296	108.69	99,428	97.10	107,821	105.29	3,246	3.17	99,230	96.90	
MEDIUM FCC Informix Database													
rootvg	LV06	**/db1**	2,400	2.34	2,048	2.00	2,325	2.27	68	0.07	2,138	2.09	**Master, Plog & Temp** DB Space files
rootvg	LV07	**/db2**	2,400	2.34	2,048	2.00	2,325	2.27	68	0.07	2,138	2.09	**Logical Logs (Llog)** DB Space file
rootvg	LV08	**/db3**	500	0.49	384	0.38	465	0.45	11	0.01	431	0.42	FCC **Data Group** DB Space file
rootvg	LV09	**/db4**	13,800	13.48	12,288	12.00	13,360	13.05	162	0.16	12,509	12.22	FCC **History Group** DB Space file
rootvg	LV10	**/log**	4,700	4.59	4,096	4.00	4,526	4.42	138	0.13	4,155	4.06	**Logical Log** Archived (Backup) files
		DB Space Allocated:	23,800	23.24	20,864	20.38	23,001	22.46	447	0.44	21,371	20.87	
		Total Space Allocated:	83,796	81.83	74,724	72.97	81,193	79.29	758	0.74	38,466	37.56	
SMALL FCC Informix Database													
rootvg	LV06	**/db1**	2,400	2.34	2,048	2.00	2,325	2.27	68	0.07	2,138	2.09	**Master, Plog & Temp** DB Space files
rootvg	LV07	**/db2**	2,400	2.34	2,048	2.00	2,325	2.27	68	0.07	2,138	2.09	**Logical Logs (Llog)** DB Space file
rootvg	LV08	**/db3**	400	0.39	256	0.25	372	0.36	11	0.01	343	0.33	FCC **Data Group** DB Space file
rootvg	LV09	**/db4**	4,700	4.59	4,096	4.00	4,526	4.42	138	0.13	4,155	4.06	FCC **History Group** DB Space file
rootvg	LV10	**/log**	2,400	2.34	2,048	2.00	2,325	2.27	68	0.07	2,138	2.09	**Logical Log** Archived (Backup) files
		DB Space Allocated:	12,300	12.01	10,496	10.25	11,873	11.59	353	0.34	10,912	10.66	
		Total Space Allocated:	72,296	70.60	64,356	62.85	70,065	68.42	3,120	3.05	63,550	62.06	

Chapter 4 Installing AIX

This chapter covers the information needed to install and configure the AIX operating system for Facility Commander.

In this chapter:

Overview

If your Facility Commander 2.2 server was purchased from GE Security, the AIX operating system and Facility Commander software are preloaded on it.

If not, start below and follow the instructions to install and configure AIX 6.1 software.

Install AIX

To install the AIX operating system, follow these steps:

Note: The installation media must be loaded in the boot device. The system *must be* set to boot from the device in which the installation media is loaded. Refer to the hardware documentation that accompanied your system for instructions on setting the boot device.

1. Insert the AIX Volume 1 media into the media device.
2. Shut down your system. If your machine is currently running, power it off by following these steps:
   a. Log in as the root user.
   b. Type the following command:

      ```
      shutdown -F
      ```

   c. If your system does not automatically power off, place the power switch in the Off position.

   Note: Any external devices (CD-ROM drive, monitor, etc.) attached to the server must be powered on before the server is powered on.
3. Power up all attached external devices.
4. Power up the server.
5. When the system beeps twice, press the F5 key (or 5 on an ASCII terminal). If you have a graphics display, you will see the keyboard icon on the screen when the beeps occur. If you have an ASCII terminal, you will see the word keyboard when the beeps occur.

   Note: Note: If your system does not boot using the F5 key (or the 5 key on an ASCII terminal), refer to your hardware documentation for information about how to boot your system from an AIX product media.

   The system begins booting from the installation media.
6. When prompted to Define the System Console, press F1 on the keyboard (or 1 on an ASCII terminal), and then press Enter.
7. You will be prompted to select a language to be used for installation. Select 1 for English, and then press Enter.
8. The Welcome to Base Operating System Installation and Maintenance page opens. Select 2, Change/ Show Installation Settings and Install, and then press Enter.
9. The Installation and Settings page opens. Select 1, System Settings, and then press Enter.
10. The Change Method of Installation page opens. Select 1, New and Complete Overwrite, and then press Enter.

11. The Change Disk(s) Where You Want to Install page opens. Select the hard disk (volume group) on which to install the operating system.

    Type 0, Continue with choices indicated above, and then press Enter.

12. The Installation and Settings page opens again. Review the settings and type 0, Install with the current settings listed above, or type the number of the one(s) you want to change. When you are satisfied with the settings, press Enter.

    If you are installing over a previous operating system, the Overwrite Installation Summary page opens. Select 1, Continued with Install, and then press Enter.

    Note: The installation process will begin and messages will display on the screen as filesets are loaded from the CD(s). This will take a while, depending on your system. When the installation is complete, the system will reboot.

Configure AIX

To configure AIX using a non-graphical terminal:

1. The Set Terminal Type page opens. Select this terminal as the console and enter the appropriate terminal type, for example: ibm3151, and then press Enter.
2. The Software License Agreements page opens. Highlight Accept License Agreements, and then press Enter.
3. The Accept License Agreements page opens. Highlight Accept Installed License Agreement. Press tab to select Yes, and press Enter.
4. Press F3 three times to return to the Software Maintenance Agreement page. Highlight Accept Software Maintenance Terms and Conditions, and then press Enter.
5. The Accept Software Maintenance Terms and Conditions page opens. Highlight Accept Software Maintenance Agreements. Press tab to select Yes, and press Enter.
6. The Command Status page opens. Press F3 three times.
7. The Installation Assistant page opens. Highlight Set Date and Time, and then press Enter
8. The Set Date and Time page opens. Select Change/Show Date, and then press Enter.
9. The Change/Show Date and Time page opens. Make necessary changes, and then press Enter.
10. Press F3 three times to return to the Set Date and Time page. Select Change Time Zone Using System Defined Values, and then press Enter.
11. The Time Zone name page opens. Highlight the appropriate choice, and then press Enter.

    Note: Selecting three letter time zone designators ("EST", "PST", "CST", etc.) cause a problem with daylight savings time. Instead of using these designators, the full "America/New York", America/San Francisco", etc. should be used.

12. The Change Time Zone page opens. To accept the system defined offsets for your time zone, press Enter.
13. The Command Status page opens. Press F3 twice to return to the Installation Assistant page. Highlight Set Root Password, and then press Enter.

14. The Set Root Password page opens. Type the new password and then type it again to confirm the entry. Press Enter.
15. The Installation Assistant page opens again. Highlight Configure Network Communications, and then press Enter.
16. The Configure Network Communication page opens. Highlight TCP/IP Startup, and then press Enter.
17. The Available Network Interfaces submenu will display. Highlight the Standard Network Interface being configured, and then press Enter.
18. The Minimum Configuration and Startup screen page opens. You are asked to enter the following information: Type or select values in all fields and when complete, press Enter.
    - Host name
    - Internet address
    - Network mask
    - Network interface nameserver
        - Internet address
        - Domain name
    - Default gateway address
        - Address
        - Cost
19. The Command Status page opens. Press F3 three times to return to the Installation Assistant page. Highlight Task complete, Exit to login, and then press Enter.
20. The console login page opens. Log in as root with the associated password, and then press Enter.
21. Reboot the system by typing: `shutdown –Fr [Enter]`
    Do not use the `reboot` command at any time. Doing so will corrupt any existing databases. A number of welcome messages are displayed. This may take several minutes.

If you are installing an Informix database, continue to *AIX Informix Database* on page 45.

Chapter 5 Installing Databases

This chapter describes the installation tasks associated with installing the databases used by Facility Commander.

In this chapter:

Overview

Facility Commander supports Informix databases.

This chapter includes information about database space requirements, default database names, login names, and passwords created during the installation process.

Table 11 lists the operating systems and databases supported by Facility Commander. Refer to the appropriate section for instructions.

Table 11. Operating systems and databases

Operating System	Linux	AIX
Database:		
Informix	✔ See page 38	✔ See page 45

Linux Informix Database

This section describes the steps needed to install Informix database using a Red Hat Linux 5.3 operating system on a standalone Facility Commander Application Server.

After installation of Informix is complete, you must run the Facility Commander database schema to create the required tables. Refer to *Installing the Linux Informix Schema* on page 42.

Installing the Informix database

To install the Informix database, follow these steps:

1. Log in as root, and then open a terminal window.
2. Insert the Facility Commander 2.2 Installation DVD. If the autorun feature does not launch, mount the DVD and start the installation as follows:

   Change directories to Media:

   ```
   cd /media [Enter]
   ```

   Make the dvd directory:

   ```
   mkdir dvd [Enter]
   ```

   Mount the DVD:

   ```
   mount /dev/dvd /media/dvd [Enter]
   ```

   Change directories to dvd:

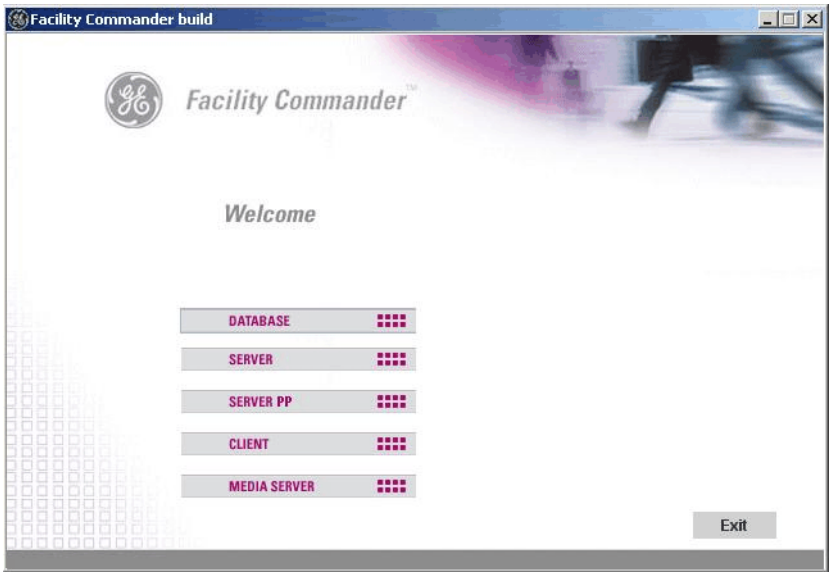
   ```
   cd /dvd [Enter]
   ```

   Start the Facility Commander installation:

   ```
   sh FC_Installer_Linux [Enter]
   ```

3. The Facility Commander Welcome page opens as shown in *Figure 10*. Click Database.

Figure 10. Facility Commander Welcome page



4. The Database Installation and Setup page opens. Click Informix. A dialog box opens to confirm that you want to install Informix. Click Yes.
5. The Informix Database Introduction page opens. Click Next to continue.
6. The Informix Database License Agreement page opens. Click I accept the terms of the License Agreement, and then click Next.
7. The Informix Password page opens. Enter a password (minimum length is six characters) for the Informix user account. This creates an Informix user, group, and owner. Click Next.
8. The Database Size page opens as shown in *Figure 11*. Use the Database Size window to select the size of the database, and then click Next.

   Refer to *Table 12* for a summary of the sizing requirements, which are based on the number of disk drives being used. The database can reside on one or more logical volumes.

   Two factors that determine the number of drives are the database vendor requirements and the Facility Commander database size.

Figure 11. Database Size page

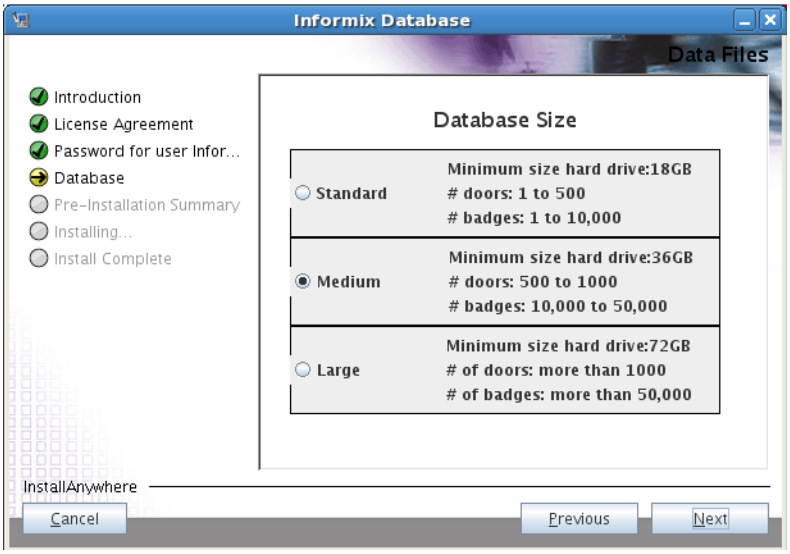


Table 12. Data Files Structure requirements

Logical volume	Mount point	Size required (MB)	Size to enter (MB)
LogVol06	/db1	2,048 (S) 2,048 (M) 2,048 (L)	2,400 (S) 2,400 (M) 2,400 (L
LogVol07	/db2	2,048 (S) 2,048 (M) 2,048 (L)[1]	2,400 (S) 2,400 (M) 2,400 (L)
LogVol08	/log	2,048 (S) 4,096 (M) 8,192 (L)	2,400 (S) 4,700 (M) 9,300 (L)

1. S = Standard database, M = Medium database, L = Large database

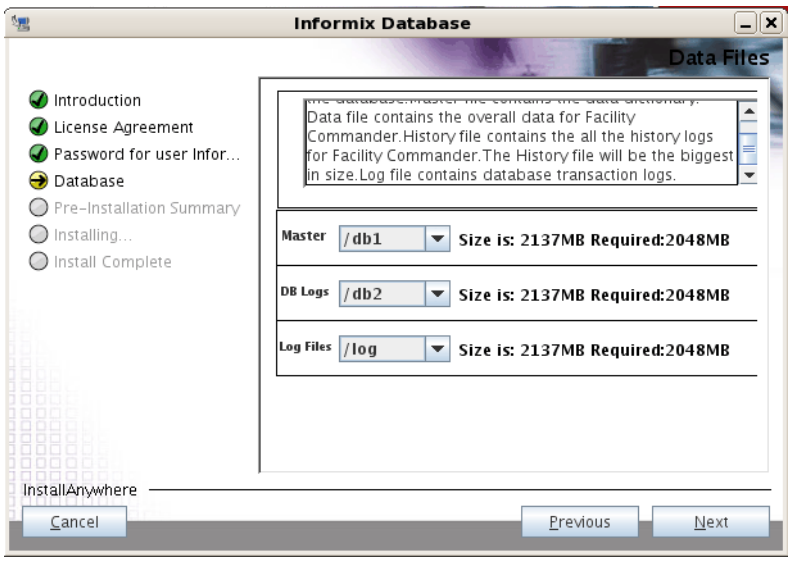
9. The Data Files page opens as shown in *Figure 12*.

   The drive must be a local drive on the system; it cannot be a network drive. The data file structure consists of:

   - Master (/db1): Includes the data dictionary and schema
   - DB Logs (/db2): Includes transactions (DML) updates to the database
   - Log (/log): Includes logical log archive (backup) files

   Select the disk drives to install the database, and then click Next.

Figure 12. Data Files page



10. The Pre-Installation Summary page opens. Click Install to complete the installation. A progress bar displays during the installation.

    This page allows you to verify the following before installing the database:

    - Product Name (Informix)
    - Disk Space Information (lists the required and available disk space)

11. When the installation is complete, a message displays stating the database has been successfully installed. Click Done. The system must be rebooted after installation.

12. To reboot the system, type: `reboot [Enter]`

    If errors occur, during the Informix installation, go to `/tmp/informix`. The error file is named `InformixDatabase_InstallLog.log`. Use the `more` command to review the log file.

13. Continue with *Installing the Linux Informix Schema* on page 42.

Installing the Linux Informix Schema

To install the Informix database, follow these steps:

1. Log in as root.
2. Open a terminal window, and then mount the DVD and start the installation as follows:

   Mount the DVD:

   ```
   mount /dev/dvd /media/dvd [Enter]
   ```

   Change directories to dvd:

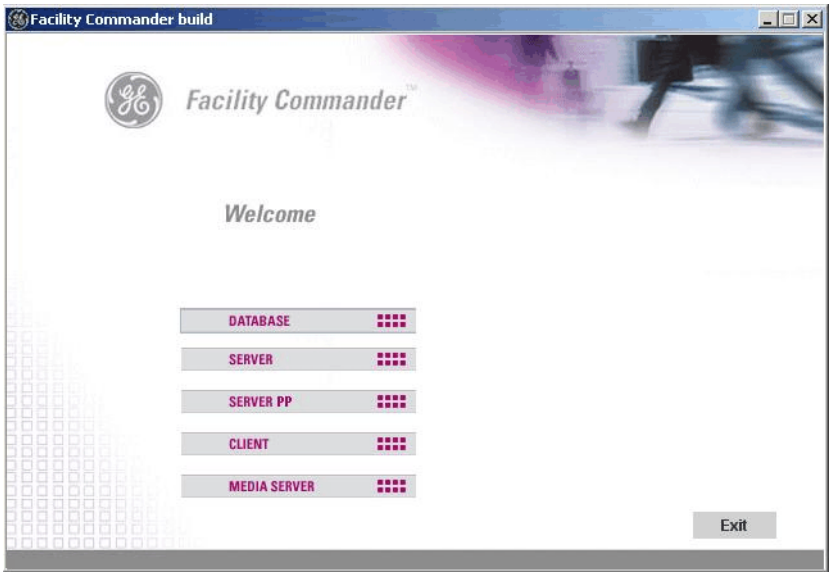
   ```
   cd dvd [Enter]
   ```

   Start the Facility Commander installation:

   ```
   sh FC_Installer_Linux [Enter]
   ```

3. The Facility Commander Welcome page opens as shown in *Figure 13*. Click Database.

Figure 13. Facility Commander Welcome page



4. A dialog box opens and asks if you want to upgrade the schema for Informix. Click No.
5. A dialog box opens and asks if you want to install the schema for Informix. Click Yes.
6. The Database Installation and Setup page opens. Click Informix Schema.
7. A dialog box opens confirming that Informix must already be installed on your system. Click Yes to continue setup of your database.
8. The Informix Schema Introduction page opens. Click Next to continue.
9. The Informix Schema License Agreement page opens. Click I accept the terms of the License Agreement, and then click Next.

10. The Informix ppadmin Password page opens. Enter a password for the ppadmin User, and then click Next.

    The ppadmin User has Database Administrator and resource privileges, which allows this user to create and remove database objects.

11. The Informix ppapp Password page opens. Enter a password for the ppapp User, and then click Next.

    The ppapp User has database connect privileges, which allows this user to insert and update information in the databases.

12. The Database Size window opens. Select the same database size used during installation of the Informix database, and then click Next.

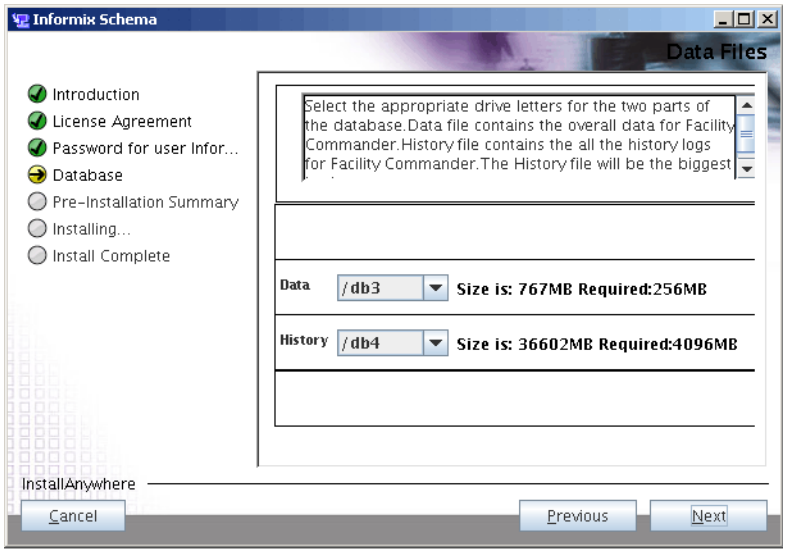
13. The Schema Data Files page opens. See *Figure 14*.

    The partition must be a local drive on the system; it cannot be a network drive. The data file structure consists of

    - Data (/db3): Includes the data dictionary and schema
    - History (/db4): Includes the Facility Commander history tables

    Select the partitions to install the schema data and history files, and then click Next.

Figure 14. Schema Data Files page



14. The Pre-Installation Summary page opens.

    This page allows you to verify the following before installing the database:

    - Product Name (Informix Schema)
    - Disk Space Information (lists the required and available disk space)

    Click Install to complete the installation.

15. When the installation is complete, the Install Complete page opens. Click Done. The system must be rebooted after installation.

16. To reboot the system, type: `reboot [Enter]`

    If errors occur, during the Informix Schema installation, go to `/tmp/informix`. The error file is named `InformixSchema.InstallLog.log`.

    You can also go to `/tmp/informix/logs`. The error files are named `SchemaCreator.log, SchemaCreatorErr.log, and create_files`. Use the `more` command to review the log file.

17. Continue with *Installing Facility Commander applications* on page 57.

AIX Informix Database

This section describes the steps needed to install the Informix database on an AIX operating system.

After installation of Informix is complete, you must run the AIX Informix schema to create the required tables. Refer to *Installing the AIX Informix Schema* on page 54.

Before you begin installation of the AIX Informix, you will need to complete these tasks:

- *Moving Physical Volumes*
- *Creating the user accounts*
- *Creating the database logical volumes* on page 47
- *Allocating space for the databases* on page 48
- *File system sizing* on page 49

Moving Physical Volumes

To move all remaining disk drives from the `rootvg` volume group, follow these steps:

1. Go to the AIX Application Manager and double-click System_Admin.
2. Double-click the Management Console icon. The Web-based System Manager window displays. In the Navigation Area, expand the host name folder, then expand the Volumes folder.
3. Click Volume Groups. Right-click rootvg, and then select Properties. This displays the volume group properties for `rootvg`.
4. Select the Physical Volumes tab. Move the available remaining physical volumes (physical drives) to Physical Volumes in Volume Group.

   Click OK. If this operation fails, select Forced option.
5. You are notified when this operation has successfully completed.

Creating the user accounts

To create the user accounts using the System Management Interface Tool (SMIT) graphical interface:

1. Open the System Management Interface Tool as follows:

   On the command line, type: `smit`, and then press Enter.
   or
   Open the Application Manager and double-click the SMIT icon.
2. The System Management Interface Tool main page opens. Click Security & Users, Groups, and then Add a Group.
3. The Add a Group page opens. Enter `informix` in the Group Name field. Change the field from False to true in the Administrative group by clicking the up arrow.

   Click Ok, and then click Cancel to close the page. The Add a Group page opens, showing the group was added. Click Done, and then click Cancel.
4. Click Return to: Security & Users. Click Users, and then click Add a User.

5. The Add a User page opens. Create the following user accounts.

   Create the informix user account as follows:

   - **User Name**: Type informix
   - **Administrative User**: False
   - **Primary Group:** Click List, and then select informix.
   - **Another User can SU to user**: True
   - **SU Group**: All

   Configure all other options depending on your preferences, and then click OK.

   Create the ppadmin user account as follows:

   Note: The ppadmin user has Database Administrator and resource privileges, which allows this user to create and remove database objects.

   - **User Name**: Type ppadmin
   - **Primary Group:** Click List, and then select informix.

   Configure all other options depending on your preferences, and then click OK.

   Create the ppapp user account as follows:

   Note: The PPApp User has database connect privileges, which allows this user to insert and update information in the databases.

   - **User Name**: Type ppapp
   - **Primary Group:** Click List, and then select usr.

   Configure all other options depending on your preferences, and then click OK.

   Click Ok, and then click Cancel to close the page. The Add a User page opens, showing the users were added. Click Done, and then click Cancel to exit the page.

6. Exit the System Management Interface Tool by clicking Exit.
7. Open a terminal window and then type `passwd informix` to create a password.

   Enter the new password, type: `informix [Enter]`

   Enter the password again, type: `informix [Enter]`
8. Type `su informix` twice. If, after the second time, you are prompted to change the password, change it to `informix`.
9. Type `passwd ppadmin` to create a password.

   Enter the new password, type: `ppadmin [Enter]`

   Enter the password again, type: `ppadm1 [Enter]`
10. Type `passwd ppapp` to create a password.

    Enter the new password, type: `ppapp [Enter]`

    Enter the password again, type: `ppapp1 [Enter]`
11. Type `exit` to return to `root`.

Creating the database logical volumes

To create the database logical volumes, follow these steps:

1. Open the System Management Interface Tool as follows:

   On the command line, type: `smit`, and then press Enter.
   or
   Open the Application Manager and double-click the SMIT icon.

2. The System Management Interface Tool main page opens. Click System Storage Management (Physical and Logical Storage), Logical Volume Manager, Logical Volumes, and then Add a Logical Volume.

3. The Add a Logical Volume dialog box opens. Click List, and then select `rootvg` to add it to the Volume Group name field on the Add a Logical Volume dialog box. Click Ok.

4. The Add a Logical Volume page opens. Enter the following: (the default value is used for many of the fields)

   Logical volume name: `lv01`

   Number of logical partitions: `1`

   Physical volume name: Click List and select `hdisk0` only if it is the only disk available. Otherwise select all of the remaining physical volumes (`hdisk1`, `hdisk2`, etc.). Click OK.

   Logical volume type: Click List and then click `jfs2` (Enhanced Journaled File System).

   Range of physical volumes: Click List and then click `maximum`.

   Logical volume label: Enter `/db1`.

   Maximum number of logical partitions (num.):

   - If one hard disk, enter 512
   - If two hard disks, enter 1024
   - If three hard disks, enter 1536

   Click OK. A success message displays when complete. Click Done. Click Cancel to return to the System Management Interface Tool main page.

5. Repeat steps 2 through 4 for lv02 through lv06. Refer to *Table 13*, *Creating database logical volumes*.

6. Click Cancel to exit the page.

Table 13. Creating database logical volumes

Volume group	Logical volume name	Logical volume label
rootvg	lv01	/db1
	lv02	/db2
	lv03	/db3
	lv04	/db4
	lv05	/log
	lv06	/bud

Allocating space for the databases

To allocate space for the databases, follow these steps:

1. From the System Management Interface Tool main page, click System Storage Management (Physical and Logical Storage), File systems, Add/Change/Show/Delete File Systems, Enhanced Journaled File Systems, and then Add an Enhanced Journaled File System on a previously defined logical volume.
2. The Add an Enhanced Standard Journaled File System page opens. Fields indicated with an asterisk (*) are required. Enter the following:

   Logical volume name: Click List, and then select lv01

   Mount point: /db1

   Mount automatically at system restart?: Yes
3. Click OK. A success message displays when complete. Click Done. Click Cancel to return to the System Management Interface Tool main page. Repeat steps 1 and 2 for lv02 through lv06. Refer to *Table 14, Logical volume sizing for databases*
4. Exit from the System Management Interface Tool main page.
5. Reboot the system by typing: `shutdown –Fr [Enter]`
   Do not use the `reboot` command at any time.
6. Open the System Management Interface Tool as follows:

   On the command line, type: `smit`, and then press Enter.
   or
   Open the Application Manager and double-click the SMIT icon.
7. The System Management Interface Tool main page opens. Click System Storage Management (Physical and Logical Storage), File systems, Add/Change/Show/Delete File Systems, Enhanced Journaled File Systems, and then Change/Show Characteristics of an Enhanced Journaled File System.
8. The Single Select List page opens. Select `/db1` from the Files System Name list.
9. The Change/Show Characteristics of an Enhanced Journaled File System page opens.
10. In the Size of File System field, Unit size, click List. Select Megabytes for the unit size.

11. In the Number of units (Num.), enter the appropriate value as shown in *Table 14, Logical volume sizing for databases*. Click Ok. You are notified when this process successfully completes.
12. Repeat steps 6 through 10 for /db2, /db3, /db4, /log, and /bud. Refer to *Table 14, Logical volume sizing for databases*.

Table 14. Logical volume sizing for databases

Volume group	Logical volume name	Mount point	Size required (MB)	Size to enter (MB)
rootvg	lv01	/db1	2,048 (S) 2,048 (M) 2,048 (L)[1]	2,400 (S) 2,400 (M) 2,400 (L)
	lv02	/db2	2,048(S) 2,048 (M) 2,048 (L)	2,400 (S) 2,400 (M) 2,400 (L)
	lv03	/db3	256 (S) 384 (M) 512 (L)	400 (S) 500 (M) 700 (L)
	lv04	/db4	4,096 (S) 12,288 (M) 32,768 (L)	4,700 (S) 13,800 (M) 36,500 (L)
	lv05	/log	2,048 (S) 4,096 (M) 8,192 (L)	2,400 (S) 4,700 (M) 9,300 (L)
	lv06	/bud	32,768	36,000

1. S = Standard database, M = Medium database, L = Large database

File system sizing

To size the file systems, follow these steps:

1. From the System Management Interface Tool main page, click System Storage Management (Physical and Logical Storage), File systems, Add/Change/Show/Delete File Systems, Enhanced Journaled File Systems, and then Change/Show Characteristics of an Enhanced Journaled File Systems.
2. The Single Select List page opens. Based on the sizing changes you need to make, select a File System Name from the Single Select list.
3. The Change/Show Characteristics of an Enhanced Journaled File System page opens.
4. In the Size of File System field, Unit size, click List. Select Megabytes for the unit size.
5. In the Number of units (Num.), enter the appropriate value as shown in *Table 15, System sizing requirements*. Click Ok. You are notified when this process successfully completes.
6. Repeat steps 2 through 6 for all file systems that require resizing.

Table 15. System sizing requirements

Volume group	Logical volume name	Enter mount point	Size required (MB)	Size to enter (MB)
rootvg	hd1	/home	512	600
	hd2	/usr	5,6,144	7,000
	hd3	/tmp	2,048	2,400
	hd4	/	4,096	5,000
	hd9var	/var	4,096	4,800

To size the boot and paging logical volumes, follow these steps:

1. Open the System Management Interface Tool as follows:

   On the command line, type: `smit`, and then press Enter.
   or
   Open the Application Manager and double-click the SMIT icon.

2. The System Management Interface Tool main page opens. Click System Storage Management (Physical and Logical Storage), Logical Volume Manager, Logical Volumes, Set Characteristic of a Logical Volume, and then Increase the Size of a Logical Volume.

3. The Increase the size of a Logical Volume dialog box opens. Click List, and then select `boot` or `paging` to add it to the Logical Volume name field on the Increase the size of a Logical Volume dialog box. Click Ok.

4. The Increase the size of a Logical Volume page opens. In the Number of Additional logical partitions (Num.) field, enter a number of blocks of 128 MB that you want to add or delete from the existing value. Click Ok.

   Example: The current paging file size is 4 logical partitions (4 x 128 MB = 512 MB) and you want to increase the size to 1024 MB. Put a value of 4 in the Number of Additional logical partitions (Num.) field so that the logical partitions will now be 8 (8 x 128 MB = 1024 MB).

5. You are notified when this process successfully completes. Click Done. Click Cancel to return to the System Management Interface Tool main page.

6. Exit from the System Management Interface Tool main page.

Volume group	Logical volume name	Recommended size	
rootvg	hd5 (boot)	100 MB	
		RAM	**Paging space**
hd	hd6 (paging)	Less than 1 GB	2 times the size of RAM
		1 GB to 2 GB	1.5 times the size of RAM
		2 GB to 8 GB	Equal to the size of RAM
		More than 8 GB	0.75 times the size of RAM

Installing the AIX Informix database

To install the AIX Informix database, follow these steps:

1. Log in as root, and then open a terminal window.
2. Log into Bash by typing `bash` in the terminal window.
3. Insert the Facility Commander 2.2 Installation DVD. If the autorun feature does not launch, mount the DVD and start the installation as follows:

   Change directories to mnt:

   ```
   cd /mnt [Enter]
   ```

   Make the dvd directory:

   ```
   mkdir dvd [Enter]
   ```

   Mount the DVD:

   ```
   mount -vcdrfs -oro /dev/cd0 /mnt/dvd [Enter]
   ```

   Change directories to dvd:

   ```
   cd dvd [Enter]
   ```

   If you are installing Facility Commander from an xterm window, type the following command:

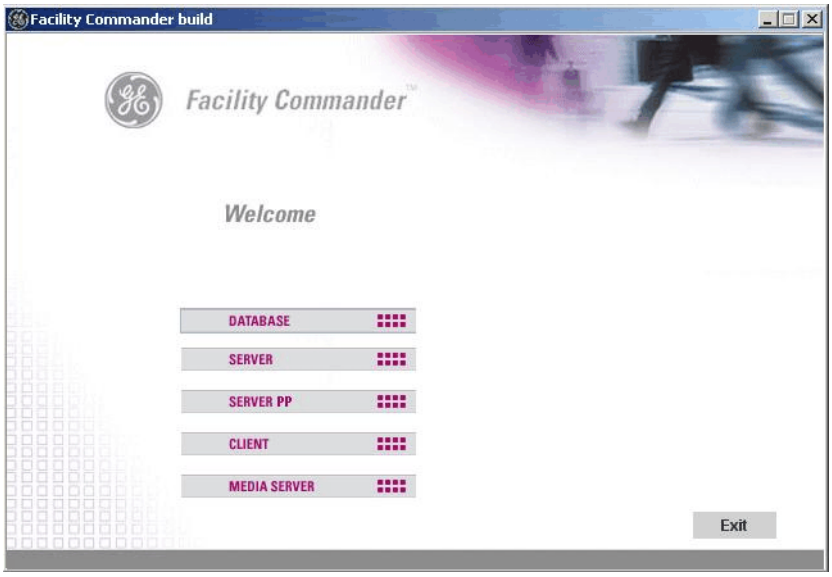
   ```
   export DISPLAY=<IP address of this computer>:0.0 [Enter]
   ```

   Start the Facility Commander installation:

   ```
   sh FC_Installer_aix [Enter]
   ```

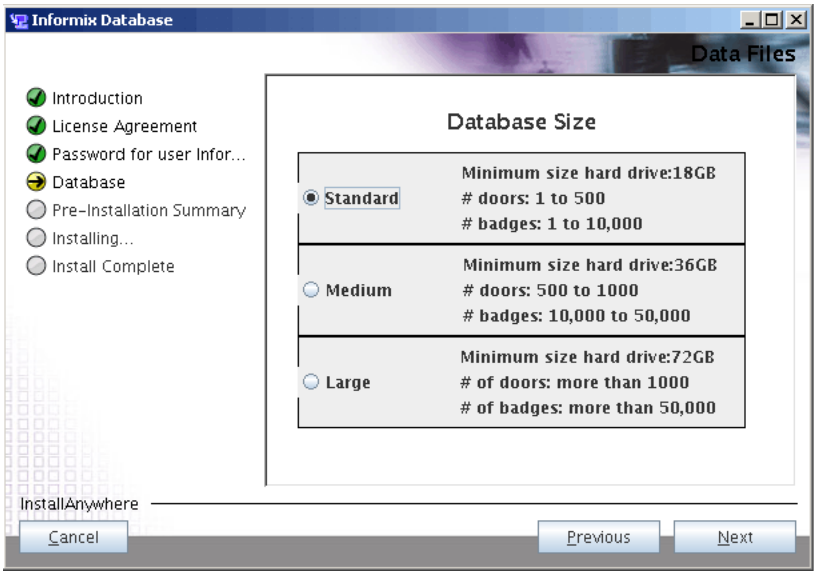
4. The Facility Commander Welcome page opens as shown in *Figure 15*. Click Database.

Figure 15. Facility Commander Welcome page



5. The Database Installation and Setup page opens. Click Informix. A dialog box opens to confirm that you want to install Informix. Click Yes.
6. The Informix Database Introduction page opens. Click Next to continue.
7. The Informix Database License Agreement page opens. Click I accept the terms of the License Agreement, and then click Next.
8. The Informix Password page opens. Enter a password (minimum length is six characters) for the Informix user account. This creates an Informix user, group, and owner. Click Next.
9. The Database Size page opens. Select the size of the database, and then click Next.

Figure 16. Database Size page



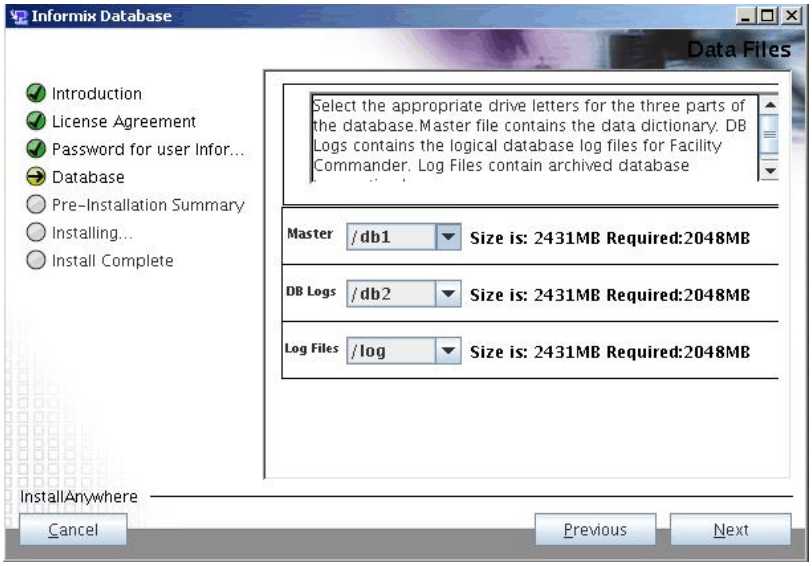
10. The Data Files page opens as shown in *Figure 17*.

    The drive must be a local drive on the system; it cannot be a network drive. The data file structure consists of:

    - Master (/db1): Includes the data dictionary and schema
    - DB Logs (/db2): Includes the Facility Commander database
    - Log (/log): Includes logical log archive (backup) files

    Select the disk drives to install the database, and then click Next.

Figure 17. Data Files page



11. The Pre-Installation Summary page opens.

    This page allows you to verify the following before installing the database:

    - Product Name (Informix)
    - Disk Space Information (lists the required and available disk space)

    Click Install to complete the installation. A progress bar displays during the installation.

12. When the installation is complete, a message displays stating the database has been successfully installed. Click Done. The system must be rebooted after installation.

13. To reboot the system, type: `reboot [Enter]`

14. If errors occur, during the Informix installation, go to `/tmp/informix`. The error file is named `InformixDatabase_InstallLog.log`. Use the more command to review the log file.Continue with *Installing the AIX Informix Schema* on page 54.

Installing the AIX Informix Schema

To install the Informix database, follow these steps:

1. Log in as root.
2. Open a terminal window, and then mount the DVD and start the installation as follows:

   Mount the DVD:

   ```
   mount -vcdrfs -oro /dev/cd0 /mnt/dvd [Enter]
   ```

   Change directories to dvd:

   ```
   cd /mnt/dvd [Enter]
   ```

   If you are installing Facility Commander from an xterm window, type the following command:

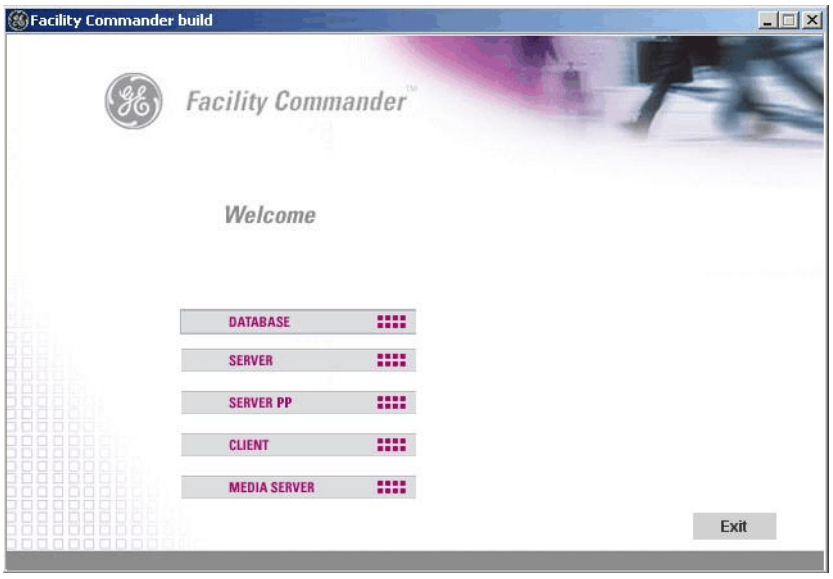
   ```
   export DISPLAY=<IP address of this computer>:0.0 [Enter]
   ```

   Start the Facility Commander installation:

   ```
   sh FC_Installer_aix [Enter]
   ```

3. The Facility Commander Welcome page opens as shown in *Figure 18*. Click Database.

Figure 18. Facility Commander Welcome page



4. A dialog box opens and asks if you want to upgrade the schema for Informix. Click No.
5. A dialog box opens and asks if you want to install the schema for Informix. Click Yes.
6. The Database Installation and Setup page opens. Click Informix Schema.
7. A dialog box opens confirming that Informix must already be installed on your system. Click Yes to continue setup of your database.
8. The Informix Schema Introduction page opens. Click Next to continue.

9. The Informix Schema License Agreement page opens. Click I accept the terms of the License Agreement, and then click Next.
10. The Informix ppadmin Password page opens. Enter a password for the ppadmin User, and then click Next.

    The ppadmin User has Database Administrator and resource privileges, which allows this user to create and remove database objects.
11. The Informix ppapp Password page opens. Enter a password for the ppapp User, and then click Next.

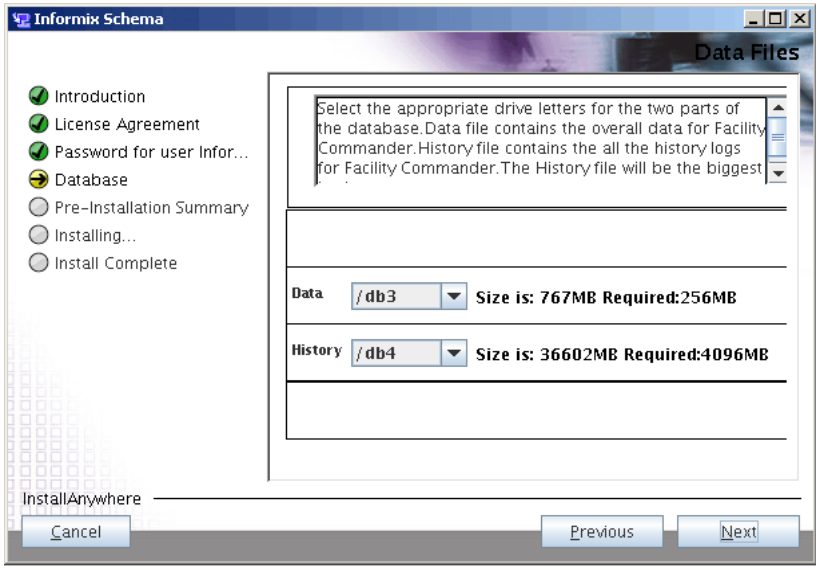
    The ppapp User has database connect privileges, which allows this user to insert and update information in the databases.
12. The Database Size window opens. Select the same database size used during installation of the Informix database, and then click Next.
13. The Schema Data Files page opens. See *Figure 19*.

    The drive must be a local drive on the system; it cannot be a network drive. The data file structure consists of:

    - Data (/db3): Includes the data dictionary and schema
    - History (/db4): Includes the Facility Commander history tables

    Select the disk drives to install the schema data and history files, and then click Next.

Figure 19. Schema Data Files page



14. The Pre-Installation Summary page opens.

    This page allows you to verify the following before installing the database:

    - Product Name (Informix Schema)
    - Disk Space Information (lists the required and available disk space)

    Click Install to complete the installation.

15. When the installation is complete, the Install Complete page opens. Click Done. The system must be rebooted after installation.
16. To reboot the system, type: `reboot [Enter]`

    If errors occur, during the Informix Schema installation, go to /`tmp/informix`. The error file is named `InformixSchema.InstallLog.log`. You can also go to `/tmp/informix/logs`.The error files are named `SchemaCreator.log`, `SchemaCreatorErr.log`, and `create_files`. Use the `more` command to review the log file.

Continue to *Installing Facility Commander applications* on page 57.

Chapter 6 Installing Facility Commander applications

This chapter describes the necessary procedures to install Facility Commander for server and client workstations, as well as remote media servers.

In this chapter:

Overview

This chapter contains the instructions necessary for installing the Facility Commander server, media server, and client workstations as well as other components and options. Refer to the appropriate sections listed below. Exit all other applications before starting the installation process.

If you are upgrading your Facility Commander 2.1 server, you must first complete the database migration procedures prior to installing Facility Commander 2.2 server installation. Refer to, *Upgrading from version 2.1 to 2.2* on page 18.

The database must be installed before proceeding to the server and client installations. Refer to *Chapter 5, Installing Databases* on page 37.

Installing Facility Commander 2.2 Server

Depending on the operating system, follow these steps:

Linux

1. Log in as **root**.
2. Insert the Facility Commander Installation DVD. If the DVD does not autorun, perform the following:

   Mount the DVD:

   ```
   mount /dev/dvd /media/dvd [Enter]
   ```

   Change directories to dvd:

   ```
   cd dvd [Enter]
   ```

   Start the Facility Commander installation:

   ```
   sh FC_Installer_Linux [Enter]
   ```
3. Continue with *Continuing the Server Installation* on page 60.

AIX

Prior to installing Facility Commander 2.2, Java 6 must be installed.

To install Java 6:

Start the Facility Commander installation:

```
sh FC_Installer_aix [Enter]
```

1. Mount the Facility Commander installation DVD as follows:
   a. Mount the DVD by typing the following command:

   ```
   mount -vcdrfs -oro /dev/cd0 /mnt/dvd [Enter]
   ```

   b. Change directories to dvd by typing the following command:

   ```
   cd dvd [Enter]
   ```

   c. If you are installing Facility Commander from an Xterm window, type the following command:

   ```
   EXPORT display=<IP address of this computer>:0.0 [Enter]
   ```

2. Copy the Java6.sdk.tar file by typing the following commands:

   ```
   mkdir /tmp/java_home [Enter]
   cd /tmp/java_home [Enter]
   cp /mnt/dvd/aixsdk/Java* . [Enter]
   ```

3. Untar the Java6.sdk.tar file by typing the following command:

   ```
   tar -xvpf Java6.sdk.tar [Enter]
   ```

4. Install the Java SDK file by typing the following command:

   ```
   smitty installp [Enter]
   ```

5. The Install and Update Software page opens. Click Install Software.
6. The Install Software page opens. Enter `./` in the INPUT device / directory for software entry field, then press Enter.
7. With the cursor on SOFTWARE to install, click F4 to view the Java6.sdk software to install, and then click F7 to select it. Press Enter.
8. With the cursor on ACCEPT new license agreements?, click Tab to accept the license agreement.
9. Press Enter twice to begin the installation. Java 6 software is installed.
10. Press F10 to exit the installation page.
11. To verify that Java 6 has been installed, type the following command:

    ```
    lslpp -l | grep Java
    ```

    All the installed Java runtime environments available will be listed. Look for Java6.sdk in the output.

12. Once Java 6 has been successfully installed, open the Facility Commander Welcome page by typing the following command:

    ```
    cd /mnt/dvd [Enter]
    sh FC_Installer_aix [Enter]
    ```

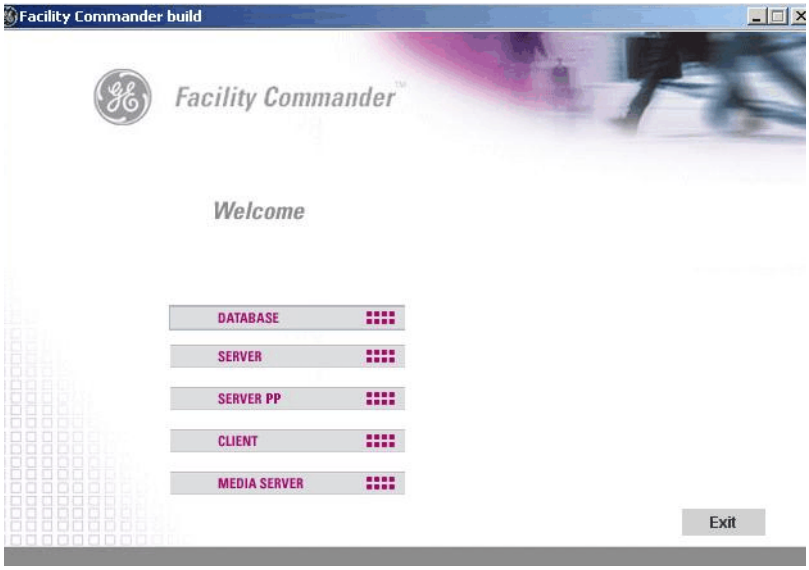
13. Continue with *Continuing the Server Installation* on page 60.

Continuing the Server Installation

To continue the server installation, follow these steps:

1. With the Facility Commander Installation DVD inserted in the DVD drive, click Server from the Facility Commander Welcome page as shown in *Figure 20*.

Figure 20. Facility Commander Welcome page



2. A dialog box opens confirming that you want to install the server. Click Yes.
3. The Facility Commander Server Introduction page opens, click Next.
4. The Facility Commander License page opens. Select "I accept the terms of the License Agreement," and then click Next.
5. The Select a Database page opens.

   Linux/AIX: Select Informix
6. The Hostname page opens. Accept the default value. This is the Facility Commander Server host name. Click Next.
7. The Username page opens. Enter a database user name for the database server or accept the default value. Click Next.

   The default Informix database user name is `ppapp`.
8. The Server Database Password page opens. Enter the password for the database server, and then click Next.

   This password must match the one assigned when you created the user account as in the appropriate procedure listed below.

   - Informix for Linux (*Linux Informix Database* on page 38)
   - Informix for AIX (*AIX Informix Database* on page 45)

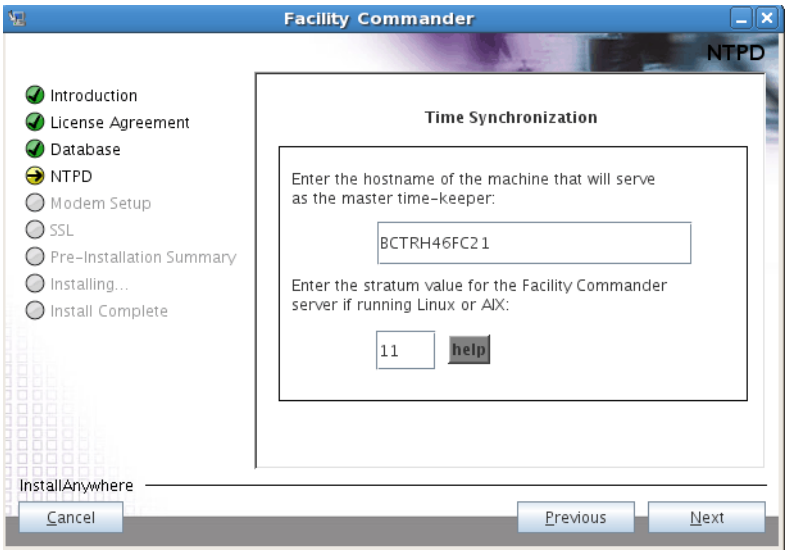
9. The Database Port page opens**.** Accept the default setting for the port number to which the server is connected. Follow the on-screen directions based on the installed database, and then click Next.

   The defaults values are:

   - Informix: `9088`

10. The Facility Commander NTPD page opens as shown in *Figure 21*.

Figure 21. Facility Commander NTPD page



Enter the host name of the machine that will serve as the master-timekeeper. The system uses NTPD as its time synchronization method between the Facility Commander and other systems.

Note: Consult your IT department for the host name of the NTP server. If there is none, enter the host name of the Picture Perfect server. You will set up the NTP services on the Picture Perfect system later during the installation.

AIX/Linux: Enter a Stratum Value. The Stratum Value determines a computer's role in the time synchronization process. By default, the Picture Perfect server is assigned a Stratum Value of 10. Enter 11 here, unless the Picture Perfect server has been assigned a different value. Check the `/etc/ntp.conf` on the Picture Perfect server. If that file does not exist, then enter 11.

Click Next.

11. The Modem Setup page opens. Click Setup Modem to set up your modem or if it is already installed, click Next.

12. The SSL page opens. The Facility Commander Server host name is automatically entered. Enter the name of the organization, the organizational unit (if applicable), city, state, and country. Click Next.

    SSL enables a secure communication channel between the access control system and the Facility Commander Server.

13. The Pre-Installation Summary page opens. Click Install to complete the installation. A progress bar displays during the installation.

    This page allows you to verify the following before actually launching the installation:

- Product Name (Facility Commander)
- Install Folder (location where Facility Commander files are stored)
  - Linux/AIX (Default Directory)`/var/FacilityCommanderServer`
- Disk Space Information (required and available space)

14. When the installation is complete, the Facility Commander Server has been successfully installed page opens. Click Done to finish the installation. You are returned to the Facility Commander Main Welcome window. Click Exit.

    If errors occur, during the Facility Commander Server installation, go to `/var/FacilityCommanderServer.` The error file is named `FacilityCommander_InstallLog.log`. Use the more command to review the log file.

15. A dialog box opens stating Do you want to reboot now? Click Yes.

After installing Facility Commander Server, you will need to obtain a software license key. Continue to *License Manager* on page 63.

Media server and client Web installations

To enable the media server and client installations to be installed from the Facility Commander 2.2 Server over the Web, the web installer files need to be manually copied from the webinstallers folder located in the root of the Facility Commander Installation DVD to the `/var/FacilityCommanderServer/server/webapps/Merlin` folder in the Facility Commander 2.2 server.

To copy the Web installer files onto the Facility Commander 2.2 server:

1. Open a terminal window on the Facility Commander 2.2 server.
2. Type the following commands:

   ```
   cd /var/FacilityCommanderServer/server/webapps/Merlin
   cp -r <DVD mount point>/Web_Installers/* .
   ```

3. Exit the terminal window.

License Manager

Facility Commander includes a copy-protection mechanism that requires a software license key. Facility Commander licensable components of Facility Commander system include, but are not limited to, the number of workstations, number of cameras, and software interface options.

After Installing Facility Commander, the License Manager window displays a 10-character machine code, and prompts you to install the 40-character license key. This is when you should call GE Security for the key.

To complete licensing for Facility Commander, follow these steps:

1. Make sure you have successfully installed the appropriate database for the operating system and the Facility Commander server software.
2. Reboot the system. For Linux and AIX users, make sure you are operating in graphical mode.
3. Open the License Manager page as follows:

   Linux: Log in as `root.` Click the Facility Commander License icon on your desktop. A dialog box opens to confirm that you want to run the Facility Commander License Manager, click Run.

   The License Manager page opens and displays a 10-character machine code. Continue to the next step.

   AIX: Log in as `root.` Open a terminal window, and type:

   ```
   cd /var/FacilityCommanderServer/server/webapps/Merlin/WEB-INF/lib [Enter]
   ```

   Type `./LicenseManager [Enter]`

   The License Manager page opens and displays a 10-character machine code. Continue to the next step.
4. To obtain a license key, contact GE Security Customer Support at:

   Telephone: 1-888-437-3287, option 5

   Email: gesecuritylicenses@ge.com

   Provide the following information. Customer Support will ask for the 10-character machine code. After you have supplied that, Customer Support provides a 40-character license key code.

   - Customer company name and address
   - Business Partner name and address
   - Sales Order number
   - 10-character machine code identifying the system

   In the License code field, enter the license key code as provided by Customer Support, and then click Validate and Save.
5. Check that all licensed components listed in the Facility Commander License Manager window are correct. The Select location of License File page opens. Accept the default location for the `license.xml` file. Click Save.
6. Reboot the system.

   Linux: Type: `reboot`

   AIX: Type: `shutdown Fr now`

Once you install the key, we strongly recommend that you store the key in a secure place if the system has to be re-installed for any reason. Also, if the network interface card has to be replaced, a new key must be generated.

Installing the Media Server on the Facility Commander Server

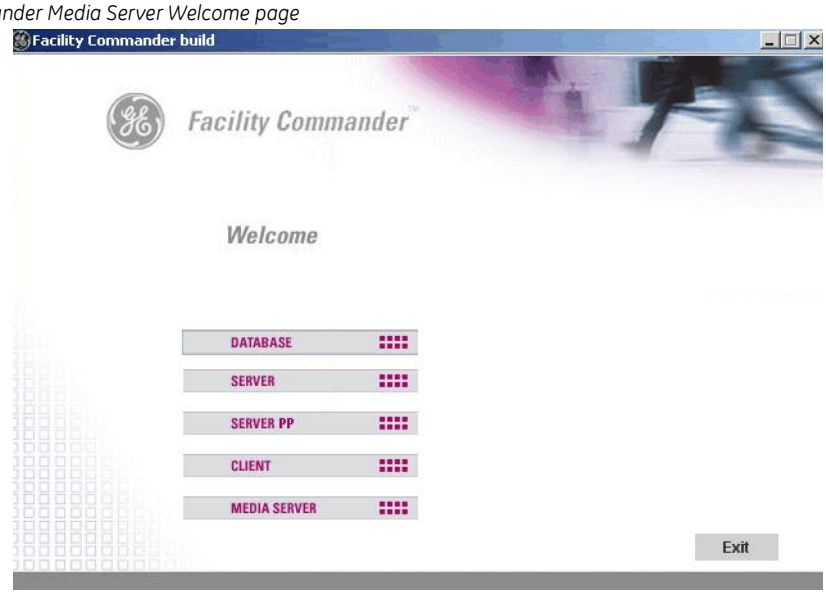
The Media Server can be installed on the Facility Commander Server, or on a separate computer. To install the Media Server on a separate computer refer to, *Installing Remote Media Servers* on page 66.

If the Media Server is installed on a Windows operating system and the firewall is ON, all ports that are configured in the Digital Video Recorders page, Addresses tab, need to be added to the firewall exceptions list.

To install the Media Server on the Facility Commander Server, follow these steps:

1. Insert the Facility Commander Installation DVD. A window displays asking if you want to run `/mnt/cdrom/autorun?` Click Yes to continue.
2. The Facility Commander Welcome page opens as shown in *Figure 22*. Click Media Server.
3. A dialog box opens to confirm that you want to install the Media Server. Click Yes.

Figure 22. Facility Commander Media Server Welcome page



4. The Facility Commander Media Server Introduction page opens. Click Next.
5. The Facility Commander Media Server License page opens. Select "I accept the terms of the License Agreement," and then click Next.
6. The Facility Commander Server page opens. Enter the Facility Commander Server hostname. Accept the default setting for the Facility Commander Server port. Click Test to verify the connection.You are notified whether the test passes or fails Click Next.

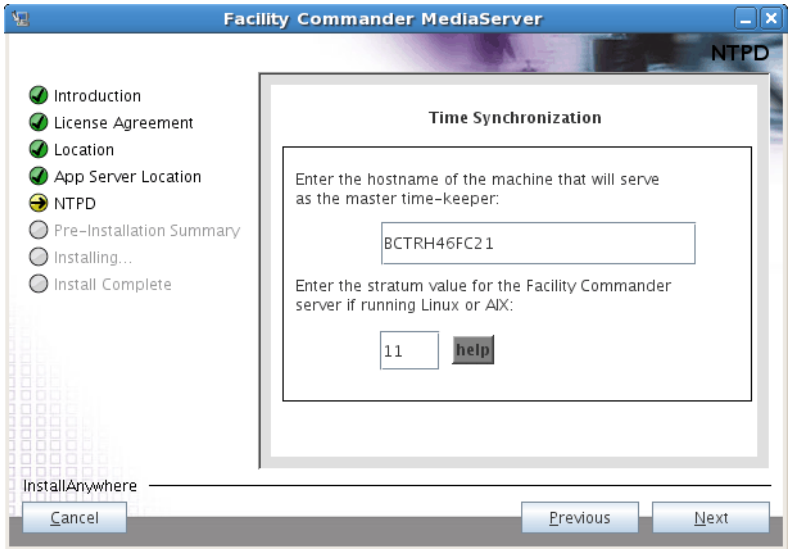
7. The Facility Commander Media Server NTPD page opens as shown in *Figure 23*.

   Enter the host name of the machine that will serve as the master-timekeeper. The system uses NTPD as its time synchronization method between the Facility Commander and other systems.

   Note: Consult your IT department for the host name of the NTP server. If there is none, enter the host name of the Picture Perfect server. You will set up the NTP services on the Picture Perfect system later during the installation.

   AIX/Linux: Enter a Stratum Value. The Stratum Value determines a computer's role in the time synchronization process. By default, the Picture Perfect server is assigned a Stratum Value of 10. Enter 11 here, unless the Picture Perfect server has been assigned a different value. Check the `/etc/ntp.conf` on the Picture Perfect server. If that file does not exist, then enter 11.

Figure 23. Facility Commander Media Server NTPD page



8. The Facility Commander Media Server Pre-Installation Summary page opens. This page allows you to verify the following before actually launching the installation:
   - **Product Name**
   - **Install Folder**
   - **Link Folder**
   - **Install Set**:
   - **Disk Space Information**
9. Click Install to complete the installation. A progress bar displays during installation.
10. The Install Complete pages opens. Click Done to quit the Installer.
11. You are returned to the Facility Commander Welcome page. Click Exit.
12. A dialog box opens asking if you want to reboot now. Click Yes.

Installing Remote Media Servers

The Remote Media Server is an optional component when there are several geographically distributed sites and it may be undesirable to transmit video clips across the network. For more information, see:

- *Centralized video management* on page 3
- *Distributed video management* on page 4

The media server software is installed on a separate, dedicated computer. The media server connects to remote DVRs and processes the requests for video tagging and video playback. The Facility Commander server would normally process the requests in a smaller environment.

The Media Server runs the media software, does not have a user interface, and does not contain a database. In addition, some digital video software interfaces are Windows DLL-dependent. In those cases, a Windows-based Media Server is required to play video.

The software must be installed on a Windows Professional XP, Windows Vista Professional, Windows Server 2008, or Linux 5.3 system (media server only).

The Media Server software can be installed in one of two ways:

- By connecting to the Facility Commander Server computer through the Web browser

  Note: The web installers need to be manually copied from the webinstallers folder in root of the Facility Commander Installation disc to the `/var/FacilityCommanderServer/server/webapps/Merlin` folder in the Facility Commander 2.2 Server. Refer to , *Media server and client Web installations* on page 62.

- From the Facility Commander Installation DVD.

Installing the Media Server from the Facility Commander Server

Note: Prior to installing the Media Server from the Facility Commander Server, the hosts file on each computer must be set up properly for the computers to communicate across the network. Refer to , *Host File Setup* on page 71.

To install the Media Server application from the Facility Commander Server computer, follow these steps:

1. Open a Web browser.
2. Click in the Address bar and type the following URL:

   `http://hostname:8085/Merlin/MediaServer/Web_Installers/install.htm`

   Note: Hostname represents the Facility Commander host name. Enter the host name or IP address in this instance only.

3. The Facility Commander Media Server download page opens. Click Windows Download.
4. The File Download dialog box opens. Click Run to begin the MediaServer.exe download or click Save to save the MediaServer.exe to your computer.

   If you click Save, after the download is complete, double-click the MediaServer.exe file to begin the download.

5. **Windows only:** If upgrading a Facility Commander 2.1 media server, Facility Commander 2.1 media server must first be uninstalled prior to installing the new Facility Commander 2.2 media server.

   Click Start, Settings, Control Panel, and then Add or Remove Programs.

   Click Facility Commander Media Server from the list, and then click Remove.

6. Proceed to step 2 of , *Installing the Media Server from the Installation DVD* on page 67.

Installing the Media Server from the Installation DVD

To install the Media Server application from the Facility Commander Installation DVD:

1. With the Facility Commander Installation DVD inserted in the DVD drive, the Facility Commander Welcome page opens.
2. Click Media Server from the Facility Commander Welcome page as shown in *Figure 24*.

Figure 24. Facility Commander Welcome page

3. **Windows only:** If upgrading a Facility Commander 2.1 media server, perform these additional steps:

   A dialog box opens asking you to confirm that you are ready to upgrade the Facility Commander Media Server. Click Yes and another dialog box opens, showing the location of the Media Server archive. When prompted, click Uninstall to delete the previous installation of the Facility Commander Client.

   Click Done when the uninstall completes, and the proceed to the next step.

4. A dialog box opens to confirm that you want to install the Media Server. Click Yes.
5. The Facility Commander Media Server Introduction page opens. Click Next.
6. The Facility Commander Media Server License page opens. Select "I accept the terms of the License Agreement," and then click Next.

7. The Facility Commander Server page opens. Enter the Facility Commander Server hostname. Accept the default setting for the Facility Commander Server port. Click Test to verify the connection.You are notified whether the test passes or fails Click Next.
8. The Facility Commander Media Server NTPD page opens as shown in *Figure 25*.

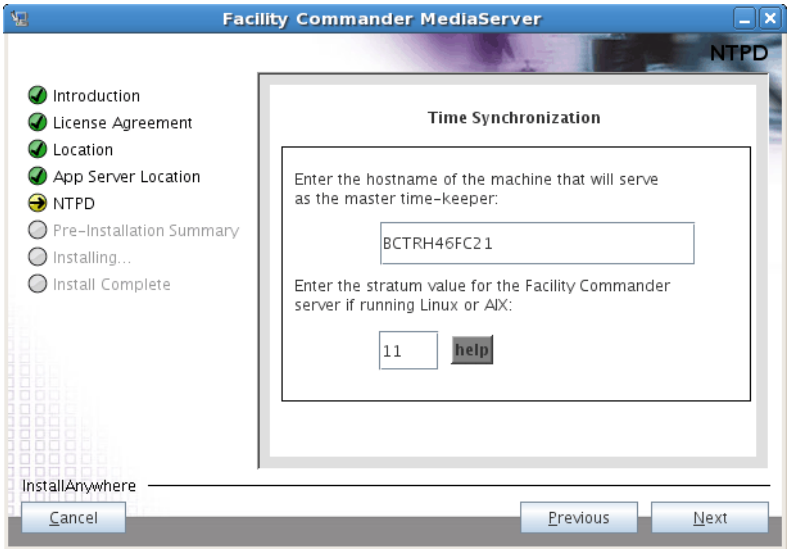
   Enter the host name of the machine that will serve as the master-timekeeper. The system uses NTPD as its time synchronization method between the Facility Commander and other systems.

   Note: Consult your IT department for the host name of the NTP server. If there is none, enter the host name of the Picture Perfect server. You will set up the NTP services on the Picture Perfect system later during the installation.

   Linux: Enter a Stratum Value. The Stratum Value determines a computer's role in the time synchronization process. By default, the Picture Perfect server is assigned a Stratum Value of 10. Enter 11 here, unless the Picture Perfect server has been assigned a different value. Check the `/etc/ntp.conf` on the Picture Perfect server. If that file does not exist, then enter 11.

   Windows: The Stratum Value is greyed out and cannot be edited.

Figure 25. Facility Commander Media Server NTPD page



9. The Facility Commander Media Server Pre-Installation Summary page opens. This page allows you to verify the following before actually launching the installation:
   - **Product Name**
   - **Install Folder**
   - **Link Folder**
   - **Install Set**
   - **Disk Space Information**
10. Click Install to complete the installation. A progress bar displays during installation.
11. The Install Complete pages opens. Click Done to quit the Installer.
12. You are returned to the Facility Commander Welcome page. Click Exit.

13. A dialog box opens asking if you want to reboot now. Click Yes.

Installing Client Workstations

The client software provides monitor and control functionality through a series of applications that include the Alarm Monitor, Event Monitor, Video Viewer, and Graphics Viewer.

The software must be installed on a Windows Professional XP or Windows Vista Professional system (clients only).

The Client software can be installed in one of two ways:

- By connecting to the Facility Commander Server computer through the Web browser, or

  Note: The web installers need to be manually copied from the webinstallers folder in root of the Facility Commander Installation Disc to /var/FacilityCommanderServer/server/webapps/Merlin folder. in the Facility Commander 2.2 Server. Refer to , *Media server and client Web installations* on page 62

- From the Facility Commander Installation DVD.

Installing the Client from the Facility Commander Server

Note: Prior to installing the Client from the Facility Commander Server, the hosts file on each computer must be set up properly for the computers to communicate across the network. Refer to , *Host File Setup* on page 71.

To install the client application from the Facility Commander Server computer, follow these steps:

1. Open a Web browser.
2. Click in the Address bar and type the following URL:

   `http://hostname:8085/Merlin/client/Web_Installers/install.htm`

   Note: Hostname represents the Facility Commander host name. Enter the host name or IP address in this instance only.

3. The Facility Commander Client download page opens. Click Windows Download.
4. The File Download dialog box opens. Click Run to begin the Client.exe download or click Save to save the Client.exe to your computer.

   If you click Save, after the download is complete, double-click the Client.exe file to begin the download.

5. **Windows only:** If upgrading a Facility Commander 2.1 client, Facility Commander 2.1 client must first be uninstalled prior to installing the new Facility Commander 2.2 client.

   Click Start, Settings, Control Panel, and then Add or Remove Programs.

   Click Facility Commander Client from the list, and then click Remove.

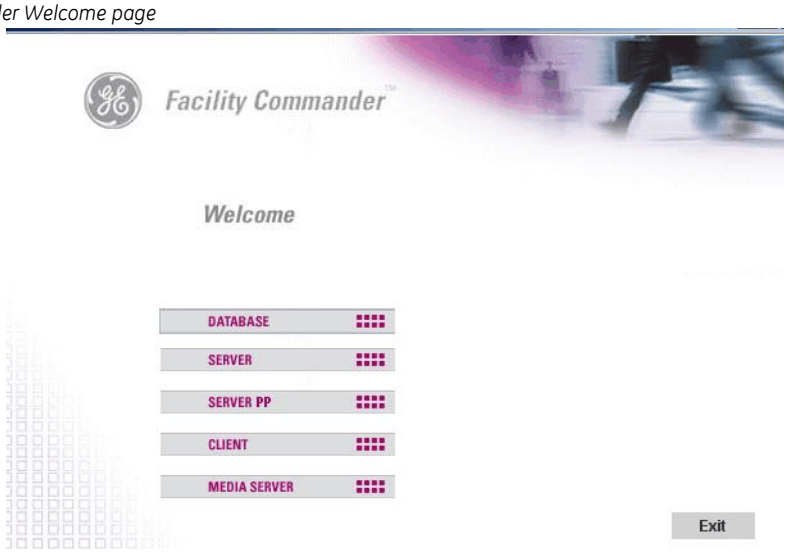
6. Proceed to step 3 of *Installing the Client from the Installation DVD*.

Installing the Client from the Installation DVD

To install the client application from the Facility Commander Installation DVD:

1. With the Facility Commander Installation DVD inserted in the DVD drive, the Facility Commander Welcome page opens.
2. Click Client from the Facility Commander Welcome page as shown in *Figure 26*.

Figure 26. Facility Commander Welcome page

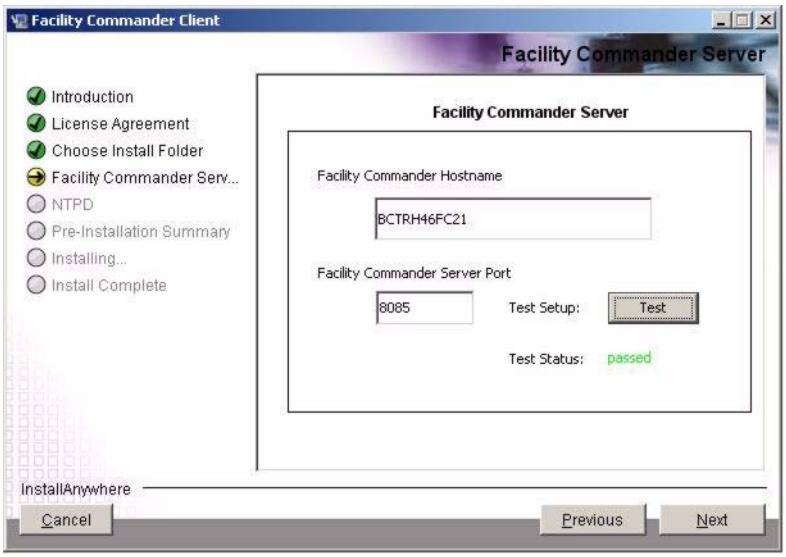


3. If upgrading the Facility Commander client, perform these additional steps:

   A dialog box opens asking you to confirm that you are ready to upgrade the Facility Commander Client. Click Yes and another dialog box opens, showing the location of the Client archive. When prompted, click Uninstall to delete the previous installation of the Facility Commander Client.

   Click Done when the uninstall completes.
4. A confirmation dialog box opens. Click Yes.
5. The Facility Commander Client Introduction page opens, click Next.
6. The Facility Commander License page opens. Select "I accept the terms of the License Agreement," and then click Next.
7. The Choose Install Folder page opens to indicate the directory that the Facility Commander client will be installed in. Accept the default location or specify another by clicking Choose. If changed the location, but decided to accept the default setting, click Restore Default Folder. Click Next.
8. The Choose Shortcut Folder page opens. Select a location for the Facility Commander Client shortcut from the available options, and then click Next.
9. The Facility Commander Server page opens as shown in *Figure 27*. Enter the host name and the port number of the Facility Commander server. Click Test to verify the connection.You are notified whether the test passes or fails Click Next.

Figure 27. Facility Commander Server page



10. The NTPD page opens. Enter the NTP server name, and then click Next.
11. The Pre-Installation Summary page opens. Click Install to complete the installation. A progress bar displays during the installation.

    This page allows you to verify the following before actually launching the installation:

    - Product Name (Facility Commander Client)
    - Install Folder (location where Facility Commander files are stored)
    - Shortcut Folder (location of the Facility Commander Client shortcut)
    - Disk Space Information (required and available space)
12. The Install Complete page opens. Click Yes, restart my system, and then click Done.

Continue to *Host File Setup*.

Host File Setup

The hosts file on each computer in a Facility Commander system must be set up properly for all computers to communicate across the network.

The Facility Commander server, remote media servers, and Kalatel DVRs must have static IP addresses. Client systems that are used for browser configuration or the Command and Control clients do not require static IP addresses.

Client systems can use DHCP as long as long as there is a domain name server (DNS) that can resolve their host names with IP addresses. Refer to *Table 16.*

Table 16. Hosts File Configuration Table

Computer system	Code	Static IP Required?	Not Using DNS (you need hosts file entries for:)	Using DNS for Clients only (you need hosts file entries for:)	Using DNS system-wide
FC Server	F	Y	F M C P	F M P	No entries required for the hosts file on any computer system.
Remote Media Servers	M	Y	F M C P	F M P	
DVRs	D	Y	Not applicable	Not applicable	
Client systems	C	N	F M P	F M P	
Picture Perfect Server	P	Y	F	F	

The host name should be entered wherever prompted except for the DVR. Do not use localhost as the host name of a computer because Facility Commander uses the host name in services and for SSL certificates.

The Facility Commander definition of host name is the response that displays when you type `hostname` at the command prompt in a terminal window.

The `hostname` command is valid regardless of the computer type (server, client) or operating system (Windows, Linux, AIX). Host names are case-sensitive.

If you are not using DNS (domain name server), remember to add IP addresses in the appropriate host file in the `/etc` directory as shown in *Table 16*. For example, the Facility Commander server requires IP addresses in its host file for itself, media server (if present), the client, and the Picture Perfect server.

Make sure you can ping all computers by host name and DVRs by IP Address in all appropriate directions.

It is necessary to include Picture Perfect in all other computers' host files because Picture Perfect is the master timekeeper and is designated as the server for NTP time synchronization of the system. Refer to *Appendix A, Time Synchronization (NTP Setup)*.

If the host name or IP address of the Facility Commander server or client systems needs to be changed, please refer to the "Advanced Configuration" chapter in the *Facility Commander Administration Guide*.

Continue to *Installing the Picture Perfect Interface* on page 95.

Starting Facility Commander

Facility Commander starts automatically as a service in the Windows, Linux, and AIX operating systems.

To access and configure Facility Commander, follow these steps:

1. Open a Web browser.
2. Click in the Address bar and type the following URL:

   `http://hostname:8085/Merlin`

   `Hostname` represents the Facility Commander Application Server host name.
3. When the Login page displays, enter the user name (`admin`) and password (`admin`).

Chapter 7 Contacting technical support

This chapter provides information on how to contact technical support in case you need assistance with your GE equipment.

In this chapter:

Contacting technical support

For assistance installing, operating, maintaining, and troubleshooting this product, refer to this document and any other documentation provided. If you still have questions, you may contact technical support during normal business hours (Monday through Friday, excluding holidays, between 8 a.m. and 8 p.m. Eastern Time).

GE Security

United States: 1-888-GE SECURITY (1-888-437-3287)

Asia: 852-2907-8108

Australia: 61-3-9259-4700

Europe: 48-58-326-22-40

Latin America: 503-885-5700

Appendix A Time Synchronization (NTP Setup)

This appendix provides information on how to synchronize the time between all the components of your Facility Commander system.

In this appendix:

Overview

It is essential that all devices and systems be synchronized for data accuracy. A Facility Commander system may include:

- Picture Perfect servers
- Facility Commander application server
- Facility Commander Remote Media Servers
- Facility Commander clients and browsers
- Digital Video Recorders (DVRs) and associated cameras.

Time synchronization across all components of the system, including Digital Video Recorders (DVRs) is mandatory.

To illustrate the importance, consider an event-to-action mapping event to tag video associated with an alarm condition.

For example, a Picture Perfect alarm is sent to the Facility Commander server and the associated video for the alarm condition is tagged.

The timestamp of this video clip and the alarm event must be identical to make the association for both real-time viewing and subsequent history reporting.

It is very important all systems in this process be synchronized to the same master clock for data accuracy.

Contact your IT Department to find out if NTP services have been established at your site. If so, have the IT Department implement it in the Picture Perfect and Secure Perfect servers. If not, follow the instructions below to setup NTP in Picture Perfect.

The following section describes how to configure NTP services, if you want to use the Picture Perfect system as the NTP master clock.

Achieving Time Synchronization

Network Time Protocol (NTP) is a protocol used to synchronize computer clock times in a network of computers. NTP services are configured to start when the operating system boots up.

- The Picture Perfect server is designated as the master time-keeper and runs the NTP service as Server.
- All Facility Commander systems run the NTP service as Client.
- For DVR time synchronization, the Facility Commander server software sends the time to each DVR at regular intervals.

NTP must be set up manually on the Picture Perfect server, and should be done at the same time that the EIF package is installed.

The NTP services are set up automatically for the Facility Commander servers and clients during the Facility Commander installation process.

Manual NTP Setup on the Picture Perfect Server

To set up the NTP service as a server in the Picture Perfect host, follow these steps:

1. Make sure that the NTP configuration file (`/etc/ntp.conf`)is set up properly. AIX and Linux use the same file.
   - Refer to *Picture Perfect (Linux System)* on page 79.
   - Refer to *Picture Perfect (AIX system)* on page 80.
2. Start NTP as a service so that it becomes part of the boot-up (**`init`**) sequence.
   - Refer to *NTP Config File* on page 79.
   - Refer to *NTP Service Startup* on page 80.
3. Verify that NTP is running.

Picture Perfect (Linux System)

NTP Config File

The `/etc/ntp.conf` file must contain the following lines:

```
server 127.127.1.0
server <ntphostname>
```

`ntphostname` is the host name of the Picture Perfect to which the Facility Commander server is synchronized.

```
fudge 127.127.1.0 stratum 10
driftfile /etc/ntp/drift
broadcastdelay 0.008
authenticate yes
```

NTP Service Startup

This section describes how to start the service, set the service to run as a permanent service, and verify the service is running.

To start NTP as a permanent service, type:

```
# chkconfig ntpd on [Enter]
```

To verify that it is started as a permanent service, follow these steps:

1. Run **`setup`** from the command line.
2. Select **System Services**.
3. Verify there is an asterisk (*) next to **`ntpd`**.
4. Reboot the system.

To verify that the service is running, follow these steps:

Type:

```
ps –ef | grep ntp [Enter]
```

The response should be:

```
ntpd –U ntp
```

Picture Perfect (AIX system)

NTP Config File

Verify the `/etc/ntp.conf` file contains the following lines:

```
server 127.127.1.0
fudge 127.127.1.0 stratum 10
driftfile /etc/ntp.drift
tracefile /etc/ntp.trace
```

NTP Service Startup

This section includes instructions to start the service, verify the service set to run as a permanent service, and that the service is running.

To start NTP from the command line (will not restart after a reboot), type:

```
startsrc –s xntpd [ENTER]
```

To start NTP as a permanent service, use SMIT as shown below:

```
smit
Communication Applications and Services
TCP/IP
Further Configuration
Server Network Services
Other Available Services
Select xntpd subsystem
Start using the xntpd Subsystem
BOTH
```

To verify that the service is running, type:

```
ps –ef | grep ntp
```

The response should be:

```
/usr/sbin/xntpd
```